TITLE V PERMIT CONDITIONS
REXAM Beverage Can Company
Permit No. V95005

These permit conditions incorporate the following Permit Revisions:
Significant Revision S03-007

Table of Contents
April 4, 2005

Permit Conditions
REXAM Beverage Can Company
V95005
April 4, 2005

These permit conditions incorporate the following Permit Revisions:
Significant Revision S03-007

In accordance with Maricopa County Air Pollution Control Rules and Regulations (Rules), Rule 210 § 302.2, all Conditions of this Permit are federally enforceable unless they are identified as being locally enforceable only. However, any Permit Condition identified as locally enforceable only will become federally enforceable if, during the term of this Permit, the underlying requirement becomes a requirement of the Clean Air Act (CAA) or any of the CAA's applicable requirements.

All federally enforceable terms and conditions of this Permit are enforceable by the Administrator of the United States Environmental Protection Agency (Administrator or Administrator of the USEPA hereafter) and citizens under Section 304 of the CAA.

Any cited regulatory paragraphs or section numbers refer to the version of the regulation that was in effect on the first date of public notice of the applicable Permit Condition unless specified otherwise.

GENERAL CONDITIONS:

1. **AIR POLLUTION PROHIBITED:** [County Rule 100 §301] [SIP Rule 3]
The Permittee shall not discharge from any source whatever into the atmosphere regulated air pollutants which exceed in quantity or concentration that specified and allowed in the County or State Implementation Plan (SIP) Rules, the Arizona Administrative Code (AAC) or the Arizona Revised Statutes (ARS), or which cause damage to property or unreasonably interfere with the comfortable enjoyment of life or property of a substantial part of a community, or obscure visibility, or which in any way degrade the quality of the ambient air below the standards established by the Maricopa County Board of Supervisors or the Director of the Arizona Department of Environmental Quality (ADEQ).

2. **CIRCUMVENTION:** [County Rule 100 §104] [40 CFR 60.12] [40 CFR 63.4(b)]
The Permittee shall not build, erect, install, or use any article, machine, equipment, condition, or any contrivance, the use of which, without resulting in a reduction in the total release of regulated air pollutants to the atmosphere, conceals or dilutes an emission which would otherwise constitute a violation of this Permit or any Rule or any emission limitation or standard. The Permittee shall not circumvent the requirements concerning dilution of regulated air pollutants by using more emission openings than is considered normal practice by the industry or activity in question.

3. **CERTIFICATION OF TRUTH, ACCURACY, AND COMPLETENESS:**
[County Rule 100 §401] [County Rule 210 §§301.7, 302.1e(1), 305.1c(1) & 305.1e]
Any application form, report, or compliance certification submitted under the County Rules or these Permit Conditions shall contain certification by a responsible official of truth, accuracy, and completeness of the application form or report as of the time of submittal. This certification and any other certification required under the County Rules or these Permit Conditions shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

4. COMPLIANCE:

A. COMPLIANCE REQUIRED:

1) The Permittee must comply with all conditions of this permit and with all applicable requirements of Arizona air quality statutes and the air quality rules. Compliance with permit terms and conditions does not relieve, modify, or otherwise affect the Permittee's duty to comply with all applicable requirements of Arizona air quality statutes and the Maricopa County Air Pollution Control Regulations. Any permit non-compliance is grounds for enforcement action; for a permit termination, revocation and reissuance, or revision; or for denial of a permit renewal application. Noncompliance with any federally enforceable requirement in this Permit constitutes a violation of the Act. [This Condition is federally enforceable if the condition or requirement itself is federally enforceable and only locally enforceable if the condition or requirement itself is locally enforceable only]

[County Rule 210 §§301.8b(4) & 302.1h(1)]

2) The Permittee shall halt or reduce the permitted activity in order to maintain compliance with applicable requirements of Federal laws, Arizona laws, the County Rules, or other conditions of this Permit.

[County Rule 210 §302.1h(2)]

3) For any major source operating in a nonattainment area for any pollutant(s) for which the source is classified as a major source, the source shall comply with reasonably available control technology (RACT) as defined in County Rule 100.

[County Rule 210 §302.1(h)(6)] [SIP Rule 220 §302.1]

4) For any major source operating in a nonattainment area designated as serious for PM_{10}, for which the source is classified as a major source for PM_{10}, the source shall comply with the best available control technology (BACT), as defined in County Rule 100.

[County Rule 210 §302.1(h)(7)]

B. COMPLIANCE CERTIFICATION REQUIREMENTS: [County Rule 210 §305.1d]

The Permittee shall file an annual compliance certification with the Control Officer and also with the Administrator of the USEPA. The report shall certify compliance with the terms and conditions contained in this Permit, including emission limitations, standards, or work practices. The certification shall be on a form supplied or approved by the Control Officer and shall include each of the following:

1) The identification of each term or condition of the permit that is the basis of the certification;
2) The compliance status;
3) Whether compliance was continuous or intermittent;
4) The method(s) used for determining the compliance status of the source, currently and over the reporting period; and
5) Other facts as the Control Officer may require to determine the compliance status of the source.

The annual certification shall be filed at the same time as the second semiannual monitoring report required by the Specific Condition section of these Permit Conditions and every 12 months thereafter.

C. COMPLIANCE PLAN: [County Rule 210 §305.1g]
Based on the certified information contained in the application for this Permit, the facility is in compliance with all applicable requirements in effect as of the first date of public notice of the proposed conditions for this Permit unless a compliance plan is included in the Specific Conditions section of this Permit. The Permittee shall continue to comply with all applicable requirements and shall meet any applicable requirements that may become effective during the term of this permit on a timely basis. [This Condition is federally enforceable if the applicable requirement itself is federally enforceable and only locally enforceable if the applicable requirement itself is locally enforceable only]

5. CONFIDENTIALITY CLAIMS:

Any records, reports or information obtained from the Permittee under the County Rules or this Permit shall be available to the public, unless the Permittee files a claim of confidentiality in accordance with ARS §49-487(c) which:

A. precisely identifies the information in the permit(s), records, or reports which is considered confidential, and

B. provides sufficient supporting information to allow the Control Officer to evaluate whether such information satisfies the requirements related to trade secrets or, if applicable, how the information, if disclosed, could cause substantial harm to the person's competitive position.
The claim of confidentiality is subject to the determination by the Control Officer as to whether the claim satisfies the claim for trade secrets.

[County Rule 100 §402] [County Rule200 §411]

A claim of confidentiality shall not excuse the Permittee from providing any and all information required or requested by the Control Officer and shall not be a defense for failure to provide such information.

[County Rule 100 §402]

If the Permittee submits information with an application under a claim of confidentiality under ARS §49-487 and County Rule 200, the Permittee shall submit a copy of such information directly to the Administrator of the USEPA.

[County Rule 210 §301.5]

6. CONTINGENT REQUIREMENTS:

NOTE: This Permit Condition covers activities and processes addressed by the CAA which may or may not be present at the facility. This condition is intended to meet the requirements of both Section 504(a) of the 1990 Amendments to the CAA, which requires that Title V permits contain conditions necessary to assure compliance with applicable requirements of the Act as well as the Acid Rain provisions required to be in all Title V permits.

A. ACID RAIN: [County Rule 210 §§302.1b(2) & 302.1f] [County Rule 371 §301]

1). Where an applicable requirement of the Act is more stringent than an applicable requirement of regulations promulgated under Title IV of the CAA and incorporated under County Rule 371, both provisions shall be incorporated into this Permit and shall be enforceable by the Administrator.

2) The Permittee shall not allow emissions exceeding any allowances that the source lawfully holds under Title IV of the CAA or the regulations promulgated thereunder and incorporated under County Rule 371.

a) No permit revision shall be required for increases in emissions that are authorized by allowances acquired under the acid rain program and incorporated under

County Rule 371, provided that such increases do not require a permit revision under any other applicable requirement.

b) No limit is placed on the number of allowances held by the Permittee. The Permittee may not, however, use allowances as a defense to non-compliance with any other applicable requirement.

c) Any such allowance shall be accounted for according to the procedures established in regulations promulgated under Title IV of the CAA.

d) All of the following prohibitions apply to any unit subject to the provisions of Title IV of the CAA and incorporated into this Permit under County Rule 371:

(1) Annual emissions of sulfur dioxide in excess of the number of allowances to emit sulfur dioxide held by the owners or operators of the unit or the designated representative of the owners or operators.

(2) Exceedances of applicable emission rates.

(3) The use of any allowance prior to the year for which it was allocated.

(4) Violation of any other provision of the permit.

B. ASBESTOS: [40 CFR 61, Subpart M] [County Rule 370 §301.8 - locally enforceable only]
The Permittee shall comply with the applicable requirements of Sections 61.145 through 61.147 and 61.150 of the National Emission Standard for Asbestos and County Rule 370 for all demolition and renovation projects.

C. RISK MANAGEMENT PLAN (RMP): [40 CFR 68]
Should this stationary source, as defined in 40 CFR 68.3, be subject to the accidental release prevention regulations in 40 CFR Part 68, then the Permittee shall submit an RMP by the date specified in 40 CFR Section 68.10 and shall certify compliance with the requirements of 40 CFR Part 68 as part of the annual compliance certification as required by 40 CFR Part 70. However, neither the RMP nor modifications to the RMP shall be considered to be a part of this Permit.

D. STRATOSPHERIC OZONE PROTECTION: [40 CFR 82 Subparts E, F, and G]
If applicable, the Permittee shall follow the requirements of 40 CFR 82.106 through 82.124 with respect to the labeling of products using ozone depleting substances.

If applicable, the Permittee shall comply with all of the following requirements with respect to recycling and emissions reductions:

1) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices under 40 CFR 82.156.

2) Equipment used during maintenance, service, repair, or disposal of appliances must meet the standards for recycling and recovery equipment in accordance with 40 CFR 82.158.

3) Persons performing maintenance, service, repair, or disposal of appliances must be certified by a certified technician under 40 CFR 82.161.

If applicable, the Permittee shall follow the requirements of 40CFR 82 Subpart G, including all Appendices, with respect to the safe alternatives policy on the acceptability of substitutes for ozone-depleting compounds.

7. DUTY TO SUPPLEMENT OR CORRECT APPLICATION: [County Rule 210 §301.6]
If the Permittee fails to submit any relevant facts or has submitted incorrect information in a permit application, the Permittee shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information. In addition, the Permittee shall provide

additional information as necessary to address any requirements that become applicable to the source after the date it filed a complete application but prior to release of a proposed permit.

8. EMERGENCY EPISODES: [County Rule 600 §302] [SIP Rule 600 §302]
If an air pollution alert, warning, or emergency has been declared, the Permittee shall comply with any applicable requirements of County Rule 600 §302.

9. EMERGENCY PROVISIONS: [County Rule 130 §§201 & 402]
An "emergency" means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, that require immediate corrective action to restore normal operation, and that cause the source to exceed a technology-based emission limitation under this permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

An emergency constitutes an affirmative defense to an action brought for noncompliance with the technology-based emission limitations if the requirements of this Permit Condition are met.

The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:

A. An emergency occurred and that the Permittee can identify the cause or causes of the emergency;
B. At the time of the emergency, the permitted source was being properly operated;
C. During the period of the emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emissions standards or other requirements in this permit; and
D. The Permittee as soon as possible telephoned the Control Officer, giving notice of the emergency, and submitted notice of the emergency to the Control Officer by certified mail, facsimile, or hand delivery within 2 working days of the time when emission limitations were exceeded due to the emergency. This notice fulfills the requirement of County Rule 210 §302.1.e(2) with respect to deviation reporting. This notice shall contain a description of the emergency, any steps taken to mitigate emissions, and corrective action taken.

In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.

This provision is in addition to any emergency or upset provision contained in any applicable requirement.

10. EXCESS EMISSIONS: [County Rule 140 §§103, 401 & 402]
NOTE: There are reporting requirements associated with excess emissions. These requirements are contained in the Reporting section of the General Permit Conditions in a subparagraph called Excess Emissions. The definition of excess emissions can be found in County Rule 100 §200.

A. Exemptions: The excess emissions provisions of this Permit Condition do not apply to the following standards and limitations:
    1) Promulgated pursuant to Section 111 (Standards Of Performance for New Stationary Sources) of the Clean Air Act (Act) or Section 112 (National Emission Standards For Hazardous Air Pollutants) of the Act;
    2) Promulgated pursuant to Title IV (Acid Deposition Control) of the Act or the regulations promulgated thereunder and incorporated under Rule 371 (Acid Rain) of these rules or Title VI (Stratospheric Ozone Protection) of the Act;

3) Contained in any Prevention Of Significant Deterioration (PSD) or New Source Review (NSR) permit issued by the Environmental Protection Agency (EPA);
4) Included in a permit to meet the requirements of Rule 240 (Permit Requirements For New Major Sources And Major Modifications To Existing Major Sources), Subsection 308.1(e) (Permit Requirements For Sources Located In Attainment And Unclassified Areas) of these rules.

B. Affirmative Defense For Malfunctions: Emissions in excess of an applicable emission limitation due to malfunction shall constitute a violation. The owner and/or operator of a source with emissions in excess of an applicable emission limitation due to malfunction has an affirmative defense to a civil or administrative enforcement proceeding based on that violation, other than a judicial action seeking injunctive relief, if the owner and/or operator of the source has complied with the excess emissions reporting requirements of these Permit Conditions and has demonstrated all of the following:
1) The excess emissions resulted from a sudden and unavoidable breakdown of the process equipment or the air pollution control equipment beyond the reasonable control of the operator;
2) The source's air pollution control equipment, process equipment, or processes were at all times maintained and operated in a manner consistent with good practice for minimizing emissions;
3) If repairs were required, the repairs were made in an expeditious fashion when the applicable emission limitations were being exceeded. Off-shift labor and overtime were utilized where practicable to ensure that the repairs were made as expeditiously as possible. If off-shift labor and overtime were not utilized, then the owner and/or operator satisfactorily demonstrated that such measures were impractical;
4) The amount and duration of the excess emissions (including any bypass operation) were minimized to the maximum extent practicable during periods of such emissions;
5) All reasonable steps were taken to minimize the impact of the excess emissions on ambient air quality;
6) The excess emissions were not part of a recurring pattern indicative of inadequate design, operation, or maintenance;
7) During the period of excess emissions, there were no exceedances of the relevant ambient air quality standards established in County Rule 510 that could be attributed to the emitting source;
8) The excess emissions did not stem from any activity or event that could have been foreseen and avoided, or planned, and could not have been avoided by better operations and maintenance practices;
9) All emissions monitoring systems were kept in operation, if at all practicable; and
10) The owner's and/or operator's actions in response to the excess emissions were documented by contemporaneous records.

C. Affirmative Defense For Startup And Shutdown:
1) Except as provided in paragraph 2) below, and unless otherwise provided for in the applicable requirement, emissions in excess of an applicable emission limitation due to startup and shutdown shall constitute a violation. The owner and/or operator of a source with emissions in excess of an applicable emission limitation due to startup and shutdown has an affirmative defense to a civil or administrative enforcement proceeding based on that violation, other than a judicial action seeking injunctive relief, if the owner and/or operator of the source has complied with the excess emissions reporting requirements of these Permit Conditions and has demonstrated all of the following:

a. The excess emissions could not have been prevented through careful and prudent planning and design;
b. If the excess emissions were the result of a bypass of control equipment, the bypass was unavoidable to prevent loss of life, personal injury, or severe damage to air pollution control equipment, production equipment, or other property;
c. The source's air pollution control equipment, process equipment, or processes were at all times maintained and operated in a manner consistent with good practice for minimizing emissions;
d. The amount and duration of the excess emissions (including any bypass operation) were minimized to the maximum extent practicable, during periods of such emissions;
e. All reasonable steps were taken to minimize the impact of the excess emissions on ambient air quality;
f. During the period of excess emissions, there were no exceedances of the relevant ambient air quality standards established in County Rule 510 (Air Quality Standards) that could be attributed to the emitting source;
g. All emissions monitoring systems were kept in operation, if at all practicable; and
h. The owner's and/or operator's actions in response to the excess emissions were documented by contemporaneous records.

2) If excess emissions occur due to a malfunction during routine startup and shutdown, then those instances shall be treated as other malfunctions subject to paragraph A. of this Permit Condition.

D. Affirmative Defense For Malfunctions During Scheduled Maintenance: If excess emissions occur due to malfunction during scheduled maintenance, then those instances will be treated as other malfunctions subject to paragraph B. of this Permit Condition.

E. Demonstration Of Reasonable And Practicable Measures: For an affirmative defense under paragraphs A and B of this Permit Condition, the owner and/or operator of the source shall demonstrate, through submission of the data and information required by this Permit Condition and the excess emissions reporting requirements of these Permit Conditions, that all reasonable and practicable measures within the owner's and/or operator's control were implemented to prevent the occurrence of the excess emissions.

11. FEES: [County Rule 200 §409] [County Rule 210 §§302.1i & 401]
The Permittee shall pay fees to the Control Officer under ARS 49-480(D) and County Rule 280.

12. MODELING: [County Rule 200 §407] [locally enforceable only]
Where the Control Officer requires the Permittee to perform air quality impact modeling, the Permittee shall perform the modeling in a manner consistent with the "Guideline on Air Quality Models (Revised)" (EPA-450/2-78-027R, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, N.C. 27711, July 1986) and "Supplement B to the Guideline on Air Quality Models" (U.S. Environmental Protection Agency, September 1990). Both documents shall be referred to hereinafter as "Guideline", and are adopted by reference. Where the person can demonstrate that an air quality impact model specified in the guideline is inappropriate, the model may be modified or another model substituted if found to be acceptable to the Control Officer.

13. MONITORING / TESTING:

A. The Permittee shall monitor, sample, or perform other studies to quantify emissions of regulated air pollutants or levels of air pollution that may reasonably be attributable to the facility if required to do so by the Control Officer, either by Permit or by order in accordance with County Rule 200 §309.

[County Rule 200 §309] [SIP Rule 41]

B. Except as otherwise specified in these Permit Conditions or by the Control Officer, the Permittee shall conduct required testing used to determine compliance with standards or permit conditions established under the County or SIP Rules or these Permit Conditions in accordance with County Rule 270 and the applicable testing procedures contained in the applicable Rule, the Arizona Testing Manual for Air Pollutant Emissions or other approved USEPA test methods.

[County Rule 200 §408] [County Rule 210 §302.1.c] [County Rule 270 §§300 & 400] [SIP Rule 27]

C. The owner or operator of a permitted source shall provide, or cause to be provided, performance testing facilities as follows:

1) Sampling ports adequate for test methods applicable to such source.
2) Safe sampling platform(s).
3) Safe access to sampling platforms(s).
4) Utilities for sampling and testing equipment.

[County Rule 270 §405] [SIP Rule 42]

14. PERMITS:

A. BASIC: [County Rule 210 §302.1h(3)]

This Permit may be revised, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a permit revision, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any Permit Condition.

B. DUST CONTROL PLAN REQUIREMENTS:

(NOTE: If the Permittee engages in or allows any routine dust generating activities at the facility, the Permittee needs to have the routine dust generating activity covered as part of this Permit. Nonroutine activities, such as construction, require a separate Earthmoving Permit that must be obtained from the Control Officer before the activity may begin.)

1) The Permittee must first submit a Dust Control Plan and obtain the Control Officer's approval of the Dust Control Plan before commencing any routine dust generating operation.

[County Rule 310 §303.3] [SIP Rule 310 §303.3]

2) A Dust Control Plan shall not be required to play on a ball field and/or for landscape maintenance. For the purpose of this Permit Condition, landscape maintenance does not include grading, trenching, nor any other mechanized surface disturbing activities.

[County Rule 310 §303.4] [SIP Rule 310 §303.4]

3) Any Dust Control Plan shall, at a minimum, contain all the information described in Section 304 of Rule 310.

[County Rule 310 §§303.1 & 304] [SIP Rule 310 §§303.1 & 304]

4) Regardless of whether an approved Dust Control Plan is in place or not, the Permittee is still subject to all requirements of Rule 310 at all times.

[County Rule 310 §303] [SIP Rule 310 §303]

C. PERMITS AND PERMIT CHANGES, AMENDMENTS AND REVISIONS:

1) The Permittee shall comply with the Administrative Requirements of Section 400 of County Rule 210 for all changes, amendments and revisions at the facility for any source subject to regulation under County Rule 200, shall comply with all required time frames, and shall obtain any required preapproval from the Control Officer before making changes. All applications shall be filed in the manner and form prescribed by the Control Officer. The application shall contain all the information necessary to enable the Control Officer to make the determination to grant or to deny a permit or permit revision including information listed in County Rule 200 §308 and County Rule 210 §§301 & 302.3.

[County Rule 200 §§301 & 308] [County Rule 210 §§301.4a, b, c, & 400]

2) The Permittee shall supply a complete copy of each application for a permit, a minor permit revision, or a significant permit revision directly to the Administrator of the USEPA. The Control Officer may require the application information to be submitted in a computer-readable format compatible with the Administrator's national database management system.

[County Rule 210 §§303.1a, 303.2, 405.4, & 406.4]

3) While processing an application, the Control Officer may require the applicant to provide additional information and may set a reasonable deadline for a response.

[County Rule 210 §301.4f]

4) No permit revision shall be required under any approved economic incentives, marketable permits, emissions trading and other similar programs or processes for changes that are provided for in this permit.

[County Rule 210 §302.1j]

D. POSTING:

1) The Permittee shall keep a complete permit clearly visible and accessible on the site where the equipment is installed.

[County Rule 200 §311]

2) If a Dust Control Plan, as required by Rule 310, has been approved by the Control Officer, the Permittee shall post a copy of the approved Dust Control Plan in a conspicuous location at the work site, within on-site equipment, or in an on-site vehicle, or shall otherwise keep a copy of the Dust Control Plan available on site at all times.

[County Rule 310 §401] [SIP Rule 310 §401]

E. PROHIBITION ON PERMIT MODIFICATION: [County Rule 200 §310]

The Permittee shall not willfully deface, alter, forge, counterfeit, or falsify this permit.

F. RENEWAL:

1) The Permittee shall submit an application for the renewal of this Permit in a timely and complete manner. For purposes of permit renewal, a timely application is one that is

submitted at least six months, but not more than 18 months, prior to the date of permit expiration. A complete application shall contain all of the information required by the County Rules including Rule 200 §308 and Rule 210 §§301 & 302.3.

[County Rule 210 §§301.2a, 301.4a, b, c, d, h & 302.3]

2) The Permittee shall file all permit applications in the manner and form prescribed by the Control Officer. To apply for a permit renewal, the Permittee shall complete the "Standard Permit Application Form" and shall supply all information, including the information required by the "Filing Instructions" as shown in Appendix B of the County Rules, which is necessary to enable the Control Officer to make the determination to grant or to deny a permit which shall contain such terms and conditions as the Control Officer deems necessary to assure a source's compliance with the requirements of the CAA, ARS and County Rules.

[County Rule 200 §§308 & 309] [County Rule 210 §301.1]

3) The Control Officer may require the Permittee to provide additional information and may set a reasonable deadline for a response.

[County Rule 210 §301.4f]

4) If the Permittee submits a timely and complete application for a permit renewal, but the Control Officer has failed to issue or deny the renewal permit before the end of the term of the previous permit, then the permit shall not expire until the renewal permit has been issued or denied. This protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit, by the deadline specified by the Control Officer, any additional information identified as being needed to process the application.

[County Rule 200 §403.2] [County Rule 210 §§301.4f & 301.9]

G. REVISION / REOPENING / REVOCATION:

1) This permit shall be reopened and revised to incorporate additional applicable requirements adopted by the Administrator pursuant to the CAA that become applicable to the facility if this permit has a remaining permit term of three or more years. No such reopening is required if the effective date of the requirement is later than the date on which this Permit is due to expire unless the original permit or any of its terms have been extended pursuant to Rule 200 §403.2.

[County Rules 200 §402.1]

Any permit revision required under this Permit Condition, 14.G.1, shall reopen the entire permit and shall comply with provisions in County Rule 200 for permit renewal *(Note: this includes a facility wide application and public comment on the entire permit)* and shall reset the five year permit term.

[County Rules 200 §402.1a(1) & 210 §302.5]

2) This permit shall be reopened and revised under any of the following circumstances:
   a) Additional requirements, including excess emissions requirements, become applicable to an affected source under the acid rain program. Upon approval by the Administrator, excess emissions offset plans shall be deemed to be incorporated into the Title V permit.
   b) The Control Officer or the Administrator determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit.

c) The Control Officer or the Administrator determines that the permit must be revised or revoked to assure compliance with the applicable requirements.

Proceedings to reopen and issue a permit under this Permit Condition, 14.G.2, shall follow the same procedures as apply to initial permit issuance and shall effect only those parts of the Permit for which cause to reopen exists.

[County Rule 200 §402.1]

3) This permit shall be reopened by the Control Officer and any permit shield revised, when it is determined that standards or conditions in the permit are based on incorrect information provided by the applicant.

[County Rule 210 §407.3]

4) This Permit may be revised, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a Permit revision, revocation and reissuance, or termination or of a notification of planned changes or anticipated noncompliance does not stay any Permit Condition.

[County Rule 210 §302.1h(3)]

H. REVISION UNDER A FEDERAL HAZARDOUS AIR POLLUTANT STANDARD:

[County Rule 210 §301.2c] [locally enforceable only]

If the Permittee becomes subject to a standard promulgated by the Administrator under Section 112(d) of the CAA, the Permittee shall, within 12 months of the date on which the standard is promulgated, submit an application for a permit revision demonstrating how the source will comply with the standard.

I. REQUIREMENTS FOR A PERMIT:

1) Air Quality Permit: Except as noted under the provisions in Sections 403 and 405 of County Rule 210, no source may operate after the time that it is required to submit a timely and complete application, except in compliance with a permit issued under County Rule 210. Permit expiration terminates the Permittee's right to operate. However, if a source submits a timely and complete application, as defined in County Rule 210 §301, for permit issuance, revision, or renewal, the source's failure to have a permit is not a violation of the County Rules until the Control Officer takes final action on the application. The Source's ability to operate without a permit as set forth in this paragraph shall be in effect from the date the application is determined to be complete until the final permit is issued. This protection shall cease to apply if, subsequent to the completeness determination, the applicant fails to submit, by the deadline specified in writing by the Control Officer, any additional information identified as being needed to process the application. If a source submits a timely and complete application for a permit renewal, but the Control Officer has failed to issue or deny the renewal permit before the end of the term of the previous permit, then the permit shall not expire until the permit renewal has been issued or denied.

[County Rule 210 §301.9]

2) Earthmoving Permit:
(NOTE: If the Permittee engages in or allows any routine dust generating activities at the facility, the Permittee needs to have the routine dust generating activity covered as part of this Permit. Non-routine activities, such as construction, require a separate

Earthmoving Permit that must be obtained from the Control Officer before the activity may begin.)
The Permittee shall not cause, commence, suffer, allow, or engage in any earthmoving operation that disturbs a total surface area of 0.10 acre or more without first obtaining a permit from the Control Officer. Permits shall not be required for earthmoving operations for emergency repair of utilities, paved roads, unpaved roads, shoulders, and/or alleys.

[County Rule 200 §305]

3) Burn Permit: The Permittee shall obtain a Permit To Burn from the Control Officer before conducting any open outdoor fire except for the activities listed in County Rule 314 §§302.1 and 302.2.

[County Rule 314] [County Rule 200 §306] [SIP Rule 314]

J. RIGHTS AND PRIVILEGES: [County Rule 210 §302.1h (4)]
This Permit does not convey any property rights nor exclusive privilege of any sort.

K. SEVERABILITY: [County Rule 210 §302.1g]
The provisions of this Permit are severable, and, if any provision of this Permit is held invalid, the remainder of this Permit shall not be affected thereby.

L. SCOPE:
The issuance of any permit or permit revision shall not relieve the Permittee from compliance with any Federal laws, Arizona laws, or the County or SIP Rules, nor does any other law, regulation or permit relieve the Permittee from obtaining a permit or permit revision required under the County Rules.

[County Rule 200 §308]

Nothing in this permit shall alter or affect the following:

1) The provisions of Section 303 of the Act (Emergency Orders), including the authority of the Administrator of the USEPA under that section.
2) The liability of the Permittee for any violation of applicable requirements prior to or at the time of permit issuance.
3) The applicable requirements of the acid rain program, consistent with Section 408(a) of the Act.
4) The ability of the Administrator of the USEPA or of the Control Officer to obtain information from the Permittee under Section 114 of the Act, or any provision of State law.
5) The authority of the Control Officer to require compliance with new applicable requirements adopted after the permit is issued. [locally enforceable only]

[County Rule 210 §407.2]

M. TERM OF PERMIT: [County Rule 210 §§302.1a & 402]
This Permit shall remain in effect for no more than 5 years from the date of issuance.

N. TRANSFER: [County Rule 200 §404]
Except as provided in ARS §49-429 and County Rule 200, this permit may be transferred to another person if the Permittee gives notice to the Control Officer in writing at least 30 days before the proposed transfer and complies with the permit transfer requirements of County Rule 200 and the administrative permit amendment procedures under County Rule 210.

15. RECORDKEEPING:

A. RECORDS REQUIRED: [County Rule 100 §501] [County Rule 310 §502] [SIP Rule 40 A]
The Permittee shall maintain records of all emissions testing and monitoring, records detailing all malfunctions which may cause any applicable emission limitation to be exceeded, records detailing the implementation of approved control plans and compliance schedules, records required as a condition of any permit, records of materials used or produced, and any other records relating to the emission of air contaminants which may be requested by the Control Officer.

B. RETENTION OF RECORDS:
Unless a longer time frame is specified by these Permit Conditions, information and records required by applicable requirements and copies of summarizing reports recorded by the Permittee and submitted to the Control Officer shall be retained by the Permittee for 5 years after the date on which the information is recorded or the report is submitted
[County Rule 100 §504] [SIP Rule 40 C]

The Permittee shall retain records of all required monitoring data and support information for a period of at least five years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit.
[County Rule 210 §§302.1d(2)]

C. MONITORING RECORDS: [County Rule 210 §§302.1d(1) & 305.1b]
Records of any monitoring required by this Permit shall include the following:
1) The date, place as defined in the permit, and time of sampling or measurements;
2) The date(s) analyses were performed;
3) The name of the company or entity that performed the analysis;
4) The analytical techniques or methods used;
5) The results of such analysis; and
6) The operating conditions as existing at the time of sampling or measurement.

D. RIGHT OF INSPECTION OF RECORDS: [County Rule 100 §106] [SIP Rule 40 D]
When the Control Officer has reasonable cause to believe that the Permittee has violated or is in violation of any provision of County Rule 100 or any County Rule adopted under County Rule 100, or any requirement of this permit, the Control Officer may request, in writing, that the Permittee produce all existing books, records, and other documents evidencing tests, inspections, or studies which may reasonably relate to compliance or noncompliance with County Rules adopted under County Rule 100. No person shall fail nor refuse to produce all existing documents required in such written request by the Control Officer.

16. REPORTING:

NOTE: See the Permit Condition titled Certification Of Truth, Accuracy and Completeness in conjunction with reporting requirements.

A. ANNUAL EMISSION INVENTORY REPORT: [County Rule 100 §505] [SIP Rule 40 B]
Upon request of the Control Officer and as directed by the Control Officer, the Permittee shall complete and shall submit to the Control Officer an annual emissions inventory report. The

report is due by April 30, or 90 days after the Control Officer makes the inventory form(s) available, whichever occurs later.

The annual emissions inventory report shall be in the format provided by the Control Officer.

The Control Officer may require submittal of supplemental emissions inventory information forms for air contaminants under ARS §49-476.01, ARS §49-480.03 and ARS §49-480.04.

B. DATA REPORTING: [County Rule 100 §502]

When requested by the Control Officer, the Permittee shall furnish to the Maricopa County Air Quality Division (Division hereafter) information to locate and classify air contaminant sources according to type, level, duration, frequency, and other characteristics of emissions and such other information as may be necessary. This information shall be sufficient to evaluate the effect on air quality and compliance with the County or SIP Rules. The Permittee may subsequently be required to submit annually, or at such intervals specified by the Control Officer, reports detailing any changes in the nature of the source since the previous report and the total annual quantities of materials used or air contaminants emitted.

C. DEVIATION REPORTING: [County Rule 210 §§302.1e & 305.1c]

The Permittee shall promptly report deviations from permit requirements, including those attributable to upset conditions. Unless specified otherwise elsewhere in these Permit Conditions, an upset for the purposes of this Permit Condition shall be defined as the operation of any process, equipment or air pollution control device outside of either its normal design criteria or operating conditions specified in this Permit and which results in an exceedance of any applicable emission limitation or standard. The Permittee shall submit the report to the Control Officer within 2 working days from knowledge of the deviation. The report shall contain a description of the probable cause of such deviations and any corrective actions or preventive measures taken. In addition, the Permittee shall report within a reasonable time of any long-term corrective actions or preventative actions taken as the result of any deviations from permit requirements.

All instances of deviations from the requirements of this Permit shall also be clearly identified in the semiannual monitoring reports required in the Specific Condition section of these Permit Conditions.

D. EMERGENCY REPORTING: [County Rule 130 §402.4]

(NOTE: Emergency Reporting is one of the special requirements which must be met by a Permittee wishing to claim an affirmative defense under the emergency provisions of County Rule 130. These provisions are listed earlier in these General Conditions in the section titled "Emergency Provisions". Since it is a form of deviation reporting, the filing of an emergency report also satisfies the requirement of County Rule 210 to file a deviation report.)

The Permittee shall, as soon as possible, telephone the Control Officer giving notice of the emergency, and submitted notice of the emergency to the Control Officer by certified mail, facsimile, or hand delivery within 2 working days of the time when emission limitations were exceeded due to the emergency. This notice shall contain a description of the emergency, any steps taken to mitigate emissions, and corrective action taken.

E. EMISSION STATEMENTS REQUIRED AS STATED IN THE ACT: [County Rule 100 §503]

Upon request of the Control Officer and as directed by the Control Officer, the Permittee shall provide the Control Officer with an emission statement, in such form as the Control Officer prescribes, showing measured actual emissions or estimated actual emissions of NO_x and volatile organic compounds (VOC) from that source. At a minimum, the emission statement shall contain all information contained in the "Guidance on Emission Statements" document as described in the USEPA's Aerometric Information Retrieval System (AIRS) Fixed Format Report (AFP 644). The statement shall contain emissions for the time period specified by the Control Officer. Statements shall be submitted annually.

F. EXCESS EMISSIONS REPORTING: [County Rule 140 §500] [locally enforceable only]
(NOTE: This reporting subsection is associated with the requirements listed earlier in these General Conditions in the section titled "Excess Emissions".)

1) The owner and/or operator of any source shall report to the Control Officer any emissions in excess of the limits established by the County or SIP Rules or by these Permit Conditions. The report shall be in two parts as specified below:
   a) Notification by telephone or facsimile within 24 hours of the time when the owner and/or operator first learned of the occurrence of excess emissions that includes all available information from paragraph 2) of this Permit Condition.
   b) Detailed written notification by submission of an excess emissions report within 72 hours of the notification required by paragraph 1) a) of this Permit Condition.

2) The excess emissions report shall contain the following information:
   a) The identity of each stack or other emission point where the excess emissions occurred;
   b) The magnitude of the excess emissions expressed in the units of the applicable emission limitation and the operating data and calculations used in determining the magnitude of the excess emissions;
   c) The time and duration or expected duration of the excess emissions;
   d) The identity of the equipment from which the excess emissions emanated;
   e) The nature and cause of such emissions;
   f) The steps taken, if the excess emissions were the result of a malfunction, to remedy the malfunction and the steps taken or planned to prevent the recurrence of such malfunctions;
   g) The steps that were or are being taken to limit the excess emissions; and
   h) If this Permit contains procedures governing source operation during periods of startup or malfunction and the excess emissions resulted from startup or malfunction, a list of the steps taken to comply with the Permit procedures.

3) In the case of continuous or recurring excess emissions, the notification requirements of this Permit Condition shall be satisfied if the source provides the required notification after excess emissions are first detected and includes in the notification an estimate of the time the excess emissions will continue. Excess emissions occurring after the estimated time period or changes in the nature of the emissions as originally reported shall require additional notification pursuant to paragraphs 1) and 2) of this Permit Condition.

G. OTHER REPORTING: [County Rule 210 §302.1h(5)]
The Permittee shall furnish to the Control Officer, within a reasonable time, any information that the Control Officer may request in writing to determine whether cause exists for revising, revoking and reissuing this permit, or terminating this permit, or to determine compliance with this permit. Upon request, the Permittee shall also furnish to the Control Officer copies of

records required to be kept by this Permit. For information claimed to be confidential, the Permittee shall furnish a copy of such records directly to the Administrator of the USEPA along with a claim of confidentiality as covered elsewhere in these Permit Conditions.

17. RIGHT TO ENTRY AND INSPECTION OF PREMISES:

The Control Officer, during reasonable hours, for the purpose of enforcing and administering County Rules or any provision of ARS relating to the emission or control prescribed pursuant thereto, may enter every building, premises, or other place, except the interior of structures used as private residences. Every person is guilty of a petty offense under ARS §49-488 who in any way denies, obstructs or hampers such entrance or inspection that is lawfully authorized by warrant.

[County Rule 100 §105]

The Permittee shall allow the Control Officer or his authorized representative, upon presentation of proper credentials and other documents as may be required by law, to:

A. Enter upon the Permittee's premises where a source is located or emissions-related activity is conducted, or where records are required to be kept under the conditions of the permit;

[County Rule 210 §305.1f] [SIP Rule 43]

B. Have access to and copy, at reasonable times, any records that are required to be kept under the conditions of the permit;

[County Rule 210 §305.1f] [SIP Rule 43]

C. Inspect, at reasonable times, any sources, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;

[County Rule 210 §305.1f] [SIP Rule 43]

D. Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the permit or other applicable requirements; and

[County Rule 210 §305.1f] [SIP Rule 43]

E. To record any inspection by use of written, electronic, magnetic, and photographic media.

[County Rule 210 §305.1f] [Locally enforceable only]

SPECIFIC CONDITIONS:

18. ALLOWABLE EMISSIONS LIMITATIONS

A. Visible Emissions

1) The Permittee shall not discharge into the ambient air from any single source of emissions any air contaminant, other than uncombined water, in excess of 20 percent opacity, except as provided in County Rule 300 §302.

[County Rule 300 §301] [locally enforceable only]

2) Except as otherwise provided in Regulation I, Rule 4, Exceptions, the opacity of any plume or effluent from any source of emissions, other than uncombined water, shall not be greater than 40 percent opacity as determined by Reference Method 9 in the Arizona Testing Manual.

[SIP Rule 30]

B. Gaseous and Odorous Air Contaminants

1) Sulfur Oxide:

The Permittee shall not emit into the ambient air any sulfur oxide in such a manner or amounts as to result in ground level concentrations at any place beyond the premises on which the source is located to exceed the limits specified below:

Concentration of Sulfur Dioxide	Averaging Time
850 $\mu g/m^3$	1 hour
250 $\mu g/m^3$	24 hours
120 $\mu g/m^3$	72 hours

[County SIP Rule 32§F]

C. Beverage Can Coating

1) The Permittee shall limit emissions of VOC from the entire facility to no more than 138 tons per any 12-month rolling period.

[County Rule 210 §302.1b]

2) The Permittee shall comply with the emission limits specified in Table 1 for the application of surface coatings onto beverage cans:

TABLE 1
SURFACE COATING VOC EMISSION LIMITS

TYPE OF SURFACE COATING	**LIMITS AS APPLIED:** VOC content minus exempt compounds (pursuant to Rule 336 §255.1)	
	(lbs/gal)	(g/liter)
Two-Piece Can Exterior Over & Bottom Varnish	2.8	340
Two- Piece Can Interior Body Spray	4.2	510
Can Printing Ink	2.5	300

[County Rule 336 §301.1][SIP Rule 34 §E.4(a)] [SIP Rule 336 §301.1]

3) The Permittee shall not discharge or cause the discharge of VOC emissions to the atmosphere from the overvarnish coating operations of either Production Lines 2 or 3, or the inside spray coating operations of either Production Lines 1, 2 or 3 (i.e., affected facilities which are subject to NSPS, subpart WW) that exceed the following volume-weighted calendar-month average emissions:

a) 0.46 kilogram of VOC per liter of coating solids from each two-piece can overvarnish coating operation

b) 0.89 kilogram of VOC per liter of coating solids from each two-piece can inside spray coating operation.

NOTE: The inside spray coating operation consists of the coating application station, flashoff area, and curing oven (i.e., inside bake oven). The overvarnish coating operation consists of the coating application station, flashoff area, and curing oven (i.e., pin oven).

[40 CFR §60.491]
[40 CFR §§ 60.492(b) and (c)]
[County Rule 360 §301.53]

4) Beginning on the date 3 years after 40 CFR Part 63, Subpart KKKK (National Emission Standards for Hazardous Pollutants: Surface Coating of Metal Cans) is published in the Federal Register, and except as provided in paragraph 5 of this permit condition, the Permittee shall limit organic HAP emissions to the atmosphere to no more than the emission limits specified in Table 2.

TABLE 2
SURFACE COATING ORGANIC HAP EMISSION LIMITS

SURFACE COATING SUBCATEGORY	**COATING TYPE**	**ORGANIC HAP EMISSION LIMIT[a,b,c]**
		kg HAP / liter solids (lbs HAP / gal solids)
Two-piece draw and iron can body coating	Two-piece beverage cans – all coatings	0.07 (0.59)

NOTES:
[a] If surface coatings of more than one type within any one subcategory are applied, the Permittee may calculate an overall subcategory emissions limit (OSEL) according to 40 CFR §63.3531(i).
[b] Rounding differences in specific emission limits are attributable to unit conversions.
[c] If the Permittee performs surface coating in more than one subcategory or utilizes more than one coating type within a subcategory, then the Permittee shall meet the individual emission limit(s) for each subcategory and coating type included.

[40 CFR §63.3490(b)] [County Rule 210 §302.1b]

5) Beginning on the date 3 years after 40 CFR Part 63, Subpart KKKK (National Emission Standards for Hazardous Pollutants: Surface Coating of Metal Cans) is published in the Federal Register, if the Permittee controls emissions with an emissions control system using the control efficiency/outlet concentration option as specified in

40 CFR §63.3491(d), the Permittee shall reduce organic HAP emissions to the atmosphere to no more than one of the following limits:

a) Reduce emissions of total HAP, measured as THC (as carbon)[a], by 95%; or

b) Limit emissions of total HAP, measured as THC (as carbon)[a] to 20 ppmvd at the control device outlet and use a permanent total enclosure (PTE).

[NOTE: [a]The Permittee may choose to subtract methane from THC as carbon measurements.]

[40 CFR §63.3490(b)] [County Rule 210 §302.1b]

D. Natural Gas Combustion

The Permittee shall not discharge, cause nor allow the discharge of particulate matter emissions, caused by combustion of fuel, from any fuel burning operation in excess of amounts calculated by the equation presented below:

For equipment having a heat input rating of 4,200 million btu/hr or less, the maximum allowable emissions (E) shall be determined by the following equation:

$E = 1.02\ Q^{0.769}$

where:

E = The maximum allowable particulate emission rate in pounds-mass per hour, and

Q = The heat output in million BTU per hour

[SIP Rule 31 §H] [SIP Rule 311 §304]

E. Regenerative Thermal Oxidizer

The Permittee shall not discharge, cause nor allow the discharge of any nitrogen oxide in excess of 50 parts per million by volume on a dry basis (ppmvd) corrected to a 15% oxygen (O_2) content from the Regenerative Thermal Oxidizer. The Permittee shall also not discharge, cause nor allow the discharge of carbon monoxide in excess of 350 ppmvd corrected to a 15% O_2 content from the Regenerative Thermal Oxidizer.

[SIP Rule 220 §404] [County Rule 241 §302]

19. OPERATIONAL LIMITATIONS AND STANDARDS

A. Gaseous and Odorous Air Contaminants

1) Gaseous and Odorous Emissions:
The Permittee shall not emit gaseous or odorous air contaminants from equipment, operations or premises under his control in such quantities or concentrations as to cause air pollution.

[County Rule 320 §300] [SIP Rule 32A]

2) Material Containment Required:
Materials including, but not limited to, solvents or other volatile compounds, paints, acids, alkalies, pesticides, fertilizer and manure shall be processed, stored, used and

transported in such a manner and by such means that they will not unreasonably evaporate, leak, escape or be otherwise discharged into the ambient air so as to cause or contribute to air pollution. Where means are available to reduce effectively the contribution to air pollution from evaporation, leakage or discharge, the installation and use of such control methods, devices or equipment shall be mandatory.

[County Rule 320 §302] [SIP Rule 32C]

B. Solvent Cleaning

1) Solvent Specification

Except for Low-VOC Cleaners, as defined in Rule 331, all cleaning solvents used in non-boiling cleaning machines shall be conforming solvents. A conforming solvent is one which has a total VOC vapor pressure at 68ºF (20ºC) not exceeding 1 millimeter of mercury column.

[County Rule 331 §304.1] [SIP Rule 331 §304.1] [SIP Rule 34 §C.2]

2) Solvent Handling Requirements

a) All cleaning-solvent, including solvent soaked materials, shall be kept in closed leakfree containers that are opened only when adding or removing material. Rags used for wipe cleaning shall be stored in closed containers when not in use. Each container shall be clearly labeled with its contents.

b) If a cleaning-solvent escapes from a container the Permittee shall:

(1) Wipe up or otherwise remove immediately if in accessible areas.

(2) For areas where access in not feasible during normal production, remove as soon as reasonably possible.

c) Unless records show that VOC-containing cleaning material was sent offsite for legal disposal, it will be assumed that it evaporated on site.

[County Rule 331 §301] [SIP Rule 331 §301]

3) Equipment Requirements for Cleaning Machines

a) The Permittee shall provide a leakfree container (degreaser) for the solvents and the articles being cleaned.

(1) The VOC-containment portion shall be impervious to VOC-containing liquid and vapors.

(2) No surface of any freeboard required by these permit conditions or Maricopa County Rule 331 or SIP Rule 331 shall have an opening or duct through which VOC can escape to the atmosphere except as required by OSHA.

[County Rule 331 §302.1] [SIP Rule 331 §302.1]

b) The Permittee shall properly maintain and operate all cleaning machine equipment required by this Permit and any of its emission controls required by this Permit.

[County Rule 331 §302.2] [SIP Rule 331 §302.2]

c) Cleaning Machine With Internal Reservoir (i.e., without remote reservoir): Except for the use of Low-VOC Cleaners, the Permittee shall comply with all of the following requirements for cleaning machines with an internal reservoir:

(1) Have and use an internal drainage rack or other assembly that confines within the freeboard all cleaning-solvent dripping from parts and returns it to the hold of the cleaning machine (degreaser).

(2) Have an impervious cover which when closed prevents cleaning-solvent vapors in the cleaning machine from escaping into the air/atmosphere when not processing work in the cleaning machine. The cover shall be fitted so that in its closed position the cover is between the cleaning-solvent and any lip exhaust or other safety vent, except that such position of cover and venting may be altered by an operator for valid concerns of flammability established in writing and certified to by a Certified Safety Professional or a Certified Industrial Hygienist to meet health and safety requirements.

(3) The freeboard height shall be not less than 6 inches (15.2 cm). Freeboard height for batch cleaning machines is the vertical distance from the solvent/air interface to the least elevated point of the top-rim when the cover is open or removed, measured during idling mode.

(4) The freeboard zone shall have a permanent, conspicuous mark that locates the maximum allowable solvent level which conforms to the applicable freeboard requirements.

[County Rule 331 §305.2] [SIP Rule 331 §305.2] [SIP Rule 34 §B]

d) Cleaning Machine That Uses Cleaning Solvent That is Heated or Agitated: Except for the use of Low-VOC Cleaners, if a cleaning machine with an internal reservoir uses a cleaning solvent at a temperature above 120°F or agitates the solvent, the Permittee shall comply with Equipment Requirements for Cleaning Machine With Internal Reservoir and either of the following paragraphs:

(1) A Water Cover: A floating layer of water (insoluble in the solvent) at least 1 inch thick, and a freeboard at least 6 inches above the top of the solvent shall be present; or

(2) Freeboard and Cover: The basin shall have a freeboard ratio of 0.75 or greater and an impervious cover shall cover the basin whenever work is not being processed.

[County Rule 331 §305.3] [SIP Rule 331 §305.3] [SIP Rule 34 §B]

4) Operating & Signage Requirements For Cleaning Machines:

a) The Permittee shall conform to the following operating requirements when cleaning with cleaning-solvents other than Low-VOC Cleaners:

(1) Comfort fans shall not be used near cleaning machines;

(2) Do not remove any device designed to cover the solvent unless processing work in the cleaning machine or maintaining the machine;

(3) Drain cleaned parts for at least (15) fifteen seconds after cleaning or until dripping ceases, whichever is later;

(4) If using a cleaning-solvent spray system:

(a) Use only a continuous, undivided stream (not a fine, atomized, or shower type spray).

(b) Pressure at the orifice from which the solvent emerges shall not exceed (10) ten psig and shall not cause liquid solvent to splash outside the solvent container.

(c) In an in-line cleaning machine, a shower-type spray is allowed, provided that the spraying is conducted in a totally confined space that is separated from the environment.

(d) Exceptions to the foregoing subsections (a), (b), and (c) are provided for in these permit conditions under Special Non-vapor Cleaning Situations.

(5) The Permittee shall not cause agitation of a cleaning-solvent in a cleaning machine by sparging with air or other gas. Covers shall be placed over ultrasonic cleaners when the cleaning cycle exceeds (15) fifteen seconds;
(6) The Permittee shall not place porous or absorbent materials in or on a cleaning machine. This includes, but is not limited to, cloth, leather, wood, and rope. No object with a sealed wood handle, including a brush, is allowed;
(7) The ventilation rate at the cleaning machine shall not exceed 65 cfm per square foot of evaporative surface (20 $m^3/min/m^2$), unless that rate must be changed to meet a standard specified and certified by a Certified Safety Professional, a Certified Industrial Hygienist, or a licensed professional engineer experienced in ventilation, to meet health and safety requirements;
(8) Limit the vertical speed of mechanical hoists moving parts in and out of the cleaning machine to a maximum of 2.2 inches per second and (11) eleven ft/min (3.3 m/min);
(9) The Permittee shall prevent cross contamination of solvents regulated by these permit conditions under Solvent Specification (i.e., County Rule 331 §304) with solvents that are not so regulated. Use signs, separated work-areas, or other effective means for this purpose. This includes those spray gun cleaning solvents that are regulated by another rule.

[County Rule 331 §303.1] [SIP Rule 331 §303.1] [SIP Rule 34 §C.1]

b) When using cleaning-solvent, other than Low-VOC Cleaner, in any solvent cleaning machine (degreaser) or dip tank, the Permittee shall provide the following signage requirements on the machine, or within 3¼ feet (1 meter) of the machine, a permanent, conspicuous label, or placard which includes, at a minimum, each of the following applicable instructions, or its equivalent:
(1) "Keep cover closed when parts are not being handled." (This is not required for remote reservoir cleaners.)
(2) "Drain parts until they can be removed without dripping."
(3) "Do not blow off parts before they have stopped dripping."
(4) "Wipe up spills and drips as soon as possible; store used spill rags [or 'wiping material'] in covered container."
(5) "Don't leave cloth or any absorbent materials in or on this tank."
(6) For cleaning machines with moving parts such as hoists, pumps, or conveyors, post: "Operating instructions can be obtained from _____" where the Permittee shall list a person or place where the instructions are available.

[County Rule 331 §303.2] [SIP Rule 331 §303.2] [SIP Rule 34 §C.1]

5) Special Non-Vapor Cleaning Situations
a) When blasting or misting with conforming solvents, the Permittee shall operate and equip the cleaning machines as follows;
(1) The device shall have internal drainage, a reservoir or sump, and a completely enclosed cleaning chamber, designed so as to prevent any perceptible liquid from emerging from the device; and
(2) The device shall be operated such that there is no perceptible leakage from the device except for incidental drops from drained, removed parts.

[County Rule 331 §307.1] [SIP Rule 331 §307.1] [SIP Rule 34 §B]

b) Cleaning systems using conforming cleaning-solvent that emerges from an object undergoing flushing with a visible mist or at a pressure exceeding 10 psig, shall use a containment system that is designed to prevent any perceptible cleaning-solvent liquid from becoming airborne outside the containment system, such as a completely enclosed chamber.

[County Rule 331 §307.3] [SIP Rule 331 §307.3] [SIP Rule 34 §B]

C. Beverage Can Coating

1) The Permittee shall conduct spray painting operations, except for architectural spray coating operations, in an enclosed area designed to contain at least 96% by weight of the overspray. For the purposes of this condition, an enclosed area means a three-sided structure with walls a minimum of 8 feet high. Spray shall be directed into the enclosure so that overspray is directed away from any opening in the enclosure. No spraying shall be conducted within three feet of any open end and/or within two feet of any open top of the enclosure.

[County Rule 315 §301.1] [SIP Rule 34 §E.1]

2) The Permittee shall operate any spray booth or enclosure with forced air exhaust such that an average overspray removal efficiency of at least 92% by weight is achieved. No gaps, sags or holes shall be present in associated filters and all exhaust must be discharged into the atmosphere.

[County Rule 315 §301.2] [locally enforceable only]

The permittee shall install, operate and maintain a baghouse with an average overspray removal efficiency of at least 92% by weight for the inside spray machines based on the schedule identified in this permit. Measurement of a pressure differential outside of the applicable parametric range of 1.0 to 6.0 inches of water for the baghouse shall require the Permittee to investigate and take corrective action if necessary to bring the control device into proper operation.

[County Rule 210 §302.1b] [County Rule 315 §301.2] [locally enforceable only]

3) The Permittee shall employ one of the following for all applications of surface coating containing more than 2 pounds of VOC per gallon (240 g/L) minus exempt compounds:
   a) A low pressure spray gun; or
   b) An electrostatic system; or
   c) A system that atomizes principally by hydraulic pressure, including “airless” and “air assisted airless”; or
   d) Non-atomizing or non-spraying application methods, such as but not limited to dipping, rolling, or brushing; or
   e) Any method which is approved by the Administrator of the Federal EPA and the Control Officer as having a transfer efficiency of 65% or greater.

[County Rule 336 §302] [SIP Rule 336 §302]

4) Prior to the completion of installation of the new regenerative thermal oxidizer and the corresponding ductwork, the Permittee shall not process beverage cans through the inside bake ovens of Production Line 2 nor Production Line 3 unless the exhaust from the Line 2 – inside bake oven (FECO Serial No. 15295) and Line 3 – inside bake oven (MOCO Serial No. 6378) is ducted in its entirety to the operating catalytic oxidizer.

After completion of installation of the new regenerative thermal oxidizer and the corresponding ductwork, the Permittee shall not process beverage cans through the inside

spray machines or the inside bake ovens of Production Line 2 or Production Line 3 unless the exhaust from the Line 2 inside spray machine and Line 2 inside bake oven (FECO Serial No. 15295) and Line 3 inside spray machine and Line 3 inside bake oven (MOCO Serial No. 6378) are ducted in their entirety to the operating regenerative thermal oxidizer.

[County Rule 210 §302.1b]

5) The Permittee shall operate the VOC emission control system such that the total VOC emissions from the inside spray coating operations associated with Production Lines 2 and 3 are reduced by at least 81% by weight.

[County Rule 210 §302.1b] [County Rule 241 §301.2]

6) The inlet temperature of the catalytic oxidizer shall be a minimum of 800°F whenever Line 2 – inside bake oven 2 (FECO Serial No. 15295) or Line 3 – inside bake oven 3 (MOCO Serial No. 6378) is in use. The Permittee may operate the catalytic oxidizer at an inlet temperature less than 800°F if it can be demonstrated through testing that the required reduction efficiency can be achieved at such lower temperature.

The combustion chamber temperature of the regenerative thermal oxidizer shall be a minimum of 1500°F whenever Line 2 inside spray machine, Line 3 inside spray machine, Line 2 inside bake oven (FECO Serial No. 15295) or Line 3 inside bake oven (MOCO Serial No. 6378) is in use. The Permittee may operate the regenerative thermal oxidizer at a combustion chamber temperature less than 1500°F if it can be demonstrated through testing that the required reduction efficiency can be achieved at such lower temperature.

[County Rule 210 §302.1b]

7) Cleanup of Coating Application Equipment - The Permittee shall comply with the following when using VOC-containing material to clean application equipment:

a) Disassemble any spray gun and other application equipment and clean it in:

(1) A container which remains covered at all times, except when the application equipment is being handled in the container, or transferred into or out of the container; or

(2) A commercially-sold gun cleaning machine which shall be operated and maintained as stipulated in the Air Pollution Permit's Operation and Maintenance (O&M) Plan, or in the absence of its mention in the O&M Plan, according to manufacturer's or distributor's instructions.

[County Rule 336 §303.1]
[SIP Rule 336 §303.1]

b) Use only solvent which, as used, has a VOC-vapor pressure below 35 mm Hg at 20°C (68°F), except for sprayless equipment in which the same principal solvent is used for cleaning as is used in the coating.

[County Rule 336 §§303.2 and 305.6]
[SIP Rule 336 §§303.2 and 305.6]

8) Handling and Disposal of VOC :

a) Use and Storage: The Permittee shall cover and keep covered each VOC-containing material which is not currently in use. The Permittee shall store finishing and cleaning materials in closed or covered leak-free containers.

[County Rule 336 §304.1]
[SIP Rule 336 §304.1]

b) Disposal of VOC and VOC-Containing Material: The Permittee shall store all VOC-containing materials intended for disposal including, but not limited to, rags, waste coatings, waste brushes, waste rollers, waste applicators, waste solvents, and their residues, in closed, leakfree containers which are legibly labeled with their contents and which remain covered when not in use.

[County Rule 336 §304.2]
[SIP Rule 336 §304.2]

9) Operation and Maintenance (O&M) Plan:
The Permittee shall operate and maintain the catalytic oxidizer, regenerative thermal oxidizer and baghouse in accordance with the requirements of the equipment specific Operations and Maintenance (O&M) Plan most recently submitted to the Control Officer for approval.

[County Rule 210 §302.1]

D. Natural Gas Combustion
The Permittee shall only use natural gas as fuel for boilers and heaters.

[County Rule 210 §302.1b]

E. Oil Mist Collection System

1) The Permittee shall operate the oil mist collection system at a control efficiency of at least 95%, or such that the outlet concentration of particulate matter in the exhaust stream from the oil mist collection system does not exceed 0.015 gr/dscf.

2) The Permittee shall maintain, readily available onsite at all times, an O&M plan for the oil mist collection system.

3) The Permittee shall install, maintain and calibrate a pressure differential monitoring gauge on each oil mist collection system. The pressure differential gauges shall monitor the pressure differential across the final filter of the two-stage filtering system. The pressure differential across the final filter of each system shall be either between 1.0 and 5.0 inches of water, or within the operating limits specified in the most recent O&M Plan approved in writing by the Department.

4) The Permittee shall fully comply with all the identified actions and schedules provided in the O&M Plan for the oil mist collection system.

5) The Permittee shall not allow any oil mist to be exhausted to the atmosphere without first passing through the oil mist collection and control system.

[County Rule 210 §302.1.h(6)]
[County Rule 241 §302]

20. MONITORING AND RECORDKEEPING REQUIREMENTS

The Permittee shall retain the following records for a period of no less than 5 years from the date of such record. Records shall be kept onsite and made available to the Control Officer upon request.

A. Visible Emissions

1) The Permittee shall log the following information for all visible emissions observations and Method 9 opacity readings required by this permit:

a) The date and time the visible emissions observation or Method 9 opacity reading was taken;
b) The name of the observer;
c) Whether or not visible emissions were present;
d) If visible emissions are present and the controls and facility processes are operating in a mode other than their normal operating conditions, such as startup or shutdown, a description of the operating conditions at the time that the opacity is observed;
e) The opacity determined by a Method 9 opacity reading, if a Method 9 reading is required by these permit conditions;
f) If applicable, a description of any corrective action(s) taken, including the date of such action(s); and
g) Any other related information.

[County Rule 210 §302.1]
[County Rule 300]

2) The Permittee shall conduct a weekly facility walk-through and observe visible emissions from any device capable of emitting any air contaminant other than uncombined water.

[County Rule 210 §302.1.c]
[County Rule 300]

3) If visible emissions, other than uncombined water, are observed being discharged into the ambient air, the Permittee shall monitor for compliance with the opacity standards specified in the permit by having a certified visible emissions evaluator determine the opacity of the visible emissions being discharged into the ambient air using the techniques specified in EPA Reference Method 9.

If the Permittee has not received either a compliance status notification or notice of violation regarding an opacity standard in the 12 months preceding the visual observation, the initial Method 9 opacity reading shall be taken within three days of observing visible emissions. If the Permittee has received either a compliance status notification or notice of violation regarding an opacity standard in the 12 months preceding the visual observation, the initial Method 9 opacity reading shall be taken within 1 day of observing visible emissions. If the emitting equipment is not operating on the day that the initial Method 9 opacity reading is required to be taken, then the initial Method 9 opacity reading shall be taken the next day that the emitting equipment is in operation. If the problem causing the visible emissions is corrected before the initial Method 9 opacity reading is required to be performed, and there are no visible emissions (excluding uncombined water) observed from the previously emitting equipment while the equipment is in normal operation, the Permittee shall not be required to conduct the Method 9 opacity readings.

Follow-up Method 9 opacity monitoring shall be performed by certified visible emissions evaluator while the emitting equipment in its standard mode of operation in accordance with the following schedule:

a) Daily:

(1) Except as provided in paragraph c) of this Permit Condition, a Method 9 opacity reading shall be conducted each day that the emitting equipment is operating until a minimum of 14 daily Method 9 readings have occurred.

(2) If the Method 9 opacity readings required by this Permit Condition are less than 20% for 14 consecutive days, the frequency of Method 9 opacity readings may be decreased to weekly, in accordance with paragraph b) of this Permit Condition.

b) Weekly:

(1) If the permittee has obtained 14 consecutive daily Method 9 readings which do not exceed 20% opacity, the frequency of Method 9 readings may be decreased to once per week for any week in which the equipment is operated.

(2) If the opacity measured during a weekly Method 9 reading exceeds 20%, the frequency of Method 9 opacity readings shall revert to daily, in accordance with paragraph a) of this Permit Condition.

(3) If the opacity measured during the required weekly Method 9 readings never exceeds 20%, the Permittee shall continue to obtain weekly opacity readings until the requirements of paragraph c) of this Permit Condition are met.

c) Cease Follow-up Method 9 Opacity Monitoring:
Regardless of the applicable monitoring schedule, follow-up Method 9 opacity readings may cease if the emitting equipment, while in its standard mode of operation, has no visible emissions, other than uncombined water, during every observation taken during a Method 9 procedure.

[County Rule 210 §302.1.c]

4) Opacity Readings

a) Opacity shall be determined by observations of visible emissions conducted in accordance with 40 CFR Part 60, Appendix A, Method 9.

[40 CFR 60.11(b)]
[County Rule 300 §501]

b) Opacity of visible emissions from intermittent sources, as defined by County Rule 300 §201, shall be determined by observations conducted in accordance with 40 CFR Part 60 Appendix A, Method 9, except that at least 12 rather than 25 consecutive readings shall be required at 15-second intervals for the averaging time.

[County Rule 300 §502]
[locally enforceable only]

B. Gaseous and Odorous Air Contaminants

The Permittee shall maintain a log of complaints of odors detected off-site. The log shall contain a description of the complaint, date and time that the complaint was received, and if given, name and/or phone number of the complainant. The logbook shall describe what actions were performed to investigate the complaint, the results of the investigation, and any corrective actions that were taken.

[County Rule 210 §302.1.c]

C. Solvent Cleaning

1) On a weekly basis, the Permittee shall inspect the solvent cleaning operations to monitor for compliance with the solvent cleaning requirements pursuant to Permit Condition 19.B. The Permittee shall maintain a checklist for the weekly inspections, indicating the date the inspection occurred, the name of the inspector, the compliance status with respect to each requirement pursuant to Permit Condition 19.B, and any corrective action taken.

[County Rule 210 §302.1]

2) The Permittee shall maintain a current list of cleaning-solvents, stating the VOC-content of each in pounds VOC per gallon of material or grams per liter of material.

[County Rule 331 §501] [SIP Rule 331 §501]

3) The Permittee shall have on site the written value of the total VOC vapor-pressure of each cleaning solvent. The written value of the total VOC vapor pressure shall be in one of the following forms:
   (a) A manufacturer's technical data sheet,
   (b) A manufacturer's safety data sheet (MSDS), or
   (c) Actual test results.

[County Rule 331 §501] [SIP Rule 331 §501]

4) The Permittee shall record the amount of cleaning-solvent used by the end of each month for the previous month. Show the type and amount of each make-up and all other cleaning-solvent.

[County Rule 331 §501] [SIP Rule 331 §501]

5) On an annual basis, the Permittee shall document the amount of concentrate that is used only in the formulation of Low VOC Cleaner.

[County Rule 331 §501] [SIP Rule 331 §501]

6) The Permittee may, for purposes of recording usage, give cleaning-solvents of similar VOC content a single group-name, distinct from any product names in the group. The total usage of all products in that group are then recorded under just one name. (In such case the Permittee shall also keep a separate list that identifies the product names of the particular solvents included under the group name.) To the group name shall be assigned the highest VOC content among the members of that group, rounded to the nearest 10^{th} of a pound of VOC per gallon of material, or to the nearest gram VOC per liter of material.

[County Rule 331 §501] [SIP Rule 331 §501]

D. Beverage Can Coating

1) Current Lists:
   a) The Permittee shall maintain a current list of coatings, adhesives, reducers, thinners, gun-cleaning materials, additives, and any other VOC-containing materials used for surface coating, stating the VOC content of material for each as received (before thinning). The Permittee shall express VOC content in 1 of 3 forms: pounds VOC per gallon, grams VOC per liter, or the percent VOC by weight along with the specific gravity or density, (2 numbers are required).

[County Rule 336 §501.1] [SIP Rule 336 §501.1]

b) The Permittee shall make the following listings for coatings and adhesives that have VOC limits specified in Table 1 of these permit conditions:

(1) VOC Before Reducing: The VOC content of each coating as received, minus exempt compounds. (This figure is sometimes called the "EPA Method 24" VOC content on manufacturer's data sheets). If the coating is a multi-part coating, list the VOC content which the manufacturer states the coating will have once you have mixed all the necessary parts together in the proportions specified by the manufacturer.

(2) List Maximum VOC Content Of Coating As Applied: For each coating that you thin/reduce or add any additive to, record in a permanent log either of the following:

(a) The maximum number of fluid ounces of thinner/reducer that you ever add to a gallon of unreduced coating (or maximum g/liter), and the maximum fluid ounces of every other additive you mix into a gallon of the coating; or

(b) The VOC content of the coating, after adding the maximum amount of thinner/reducer and other additives that the Permittee would ever add, as determined by the formula below:

$$\text{VOC Content Minus Exempt Compounds} = \frac{W_s - W_w - W_{es}}{V_m - V_w - V_{es}}$$

Using consistently either English or metric measures in the calculations,

where:

W_s = weight of all volatile material in pounds (or grams), including VOC, water, non-precursor organic compounds and dissolved vapors

W_w = weight of water in pounds (or grams)

W_{es} = weight of all non-precursor compounds in pounds (or grams)

V_m = volume of total material in gallons (or liters)

V_w = volume of water in gallons (or liters)

V_{es} = volume of all non-precursor compounds in gallons (or liters)

(3) The Permittee shall retain a hardcopy of the VOC vapor pressure (VP) at 20°C (68°F) of solvent(s) used to clean spray guns; hoses, reservoirs, and any other coating application equipment. Any one of the following ways of providing the VP data is sufficient:

(a) A current manufacturer's technical data sheet;

(b) A current manufacturer's safety data sheet (MSDS);

(c) Actual test results; or

(d) A letter signed by an official or lab manager of the supplying facility.

[County Rule 336 §501.1] [SIP Rule 336 §501.1]

2) Frequency of Updating Usage Records: The Permittee shall update the usage records required under these permit conditions, showing the type and amount used of each VOC-containing coating or adhesive which is regulated by name or type in Table 1 of these permit conditions, and update each VOC-containing material, related to surface coating, that is not addressed by Table 1. This includes, but is not limited to, thinners, surfacers, and diluents. The Permittee shall maintain records according to the following schedule:

a) Monthly: Except as provide in paragraph b) of this permit conditions, the Permittee shall update records of each coating used that complies with the VOC limits in Table 1 of these permit conditions, and each coating that is not addressed by Table 1 on a monthly basis. The update shall be complete by the 15th day following the last day of each month.

[County Rule 210 §302.1] [County Rule 336 §501.2] [SIP Rule 336 §501.2]

b) Weekly: If the 12-month rolling total facility-wide VOC emissions for the most recent 12-month period is at least 80% of the facility-wide VOC limit required pursuant to this permit (i.e., 110 tons/12-month rolling period), the Permittee shall update records of each coating used that complies with the VOC limits in Table 1 of these permit conditions, and each coating that is not addressed by Table 1 on a weekly basis. The update shall be complete by the end of the day following the last day of each week.

[County Rule 210 §302.1]

c) Daily: On a daily basis, the Permittee shall update the usage of each coating that exceeds its limits in Table 1.

[County Rule 336 §501.2] [SIP Rule 336 §501.2]

d) The Permittee shall record each instance in which the volume-weighted average of the total mass of VOC per volume of coating solids is greater than the limit specified in these permit conditions. The volume-weighted average of the total mass of VOC per volume of coating solids shall be calculated in accordance with 40 CFR §60.493(b)(1).

[40 CFR §60.495(b)] [County Rule 360 §301.53]

3) VOC Emissions Calculations:
The Permittee shall calculate the 12-month rolling total facility-wide VOC emissions in accordance with the following schedule:

a) Monthly: On a monthly basis, the Permittee shall calculate the 12-month rolling total facility-wide VOC emissions by the 15th day following the last day of each month;

or

b) Weekly and Monthly: If the 12-month rolling total facility-wide VOC emissions for the most recent 12-month period is at least 80% of the facility-wide VOC limit required pursuant to this permit (i.e., 110 tons/12-month rolling period), the Permittee shall calculate the 12-month rolling total facility-wide VOC emissions on a weekly basis and a monthly basis. Weekly VOC emission calculations will provide the amount of VOC emissions for a portion of the current month and for the 11 months prior to the current month. The Permittee shall subtract the result of the weekly VOC emissions calculation from the facility-wide VOC emissions limit specified in this permit (i.e., 138 tons/12-month period) in order to determine the amount of facility-wide VOC emissions that are allowed to be emitted during the remainder of the current month without exceeding the 138-ton limit. The Permittee shall adjust production as necessary such that the facility-wide VOC emissions limit specified in this permit is not exceeded.

The overall VOC reduction efficiency used in the VOC emissions calculations for the Line 2 and Line 3 inside-spray coating operations shall be no higher than 81% by weight, as required by this permit, unless otherwise approved by the Control Officer. VOC emission calculations for other processes shall incorporate a zero VOC reduction efficiency.

[County Rule 210 §302.1]

4) Catalytic Oxidizer and Regenerative Thermal Oxidizer Monitoring and Recordkeeping Requirements:

a) Operation Indicator Monitoring

(1) The Permittee shall make a permanent record of all key system operating parameters of the catalytic oxidizer, as specified in the O&M Plan for the catalytic oxidizer, until such time that the catalytic oxidizer has been permanently replaced by the regenerative thermal oxidizer.

[County Rule 210 §302.1]

(2) Once the regenerative thermal oxidizer is operational, the permittee shall continuously monitor and record the combustion chamber temperature of the regenerative thermal oxidizer using a programmable logic controller or other means to ensure operation in the acceptable range of 1500 to 1600 ˚F. For any instance in which the oxidizer operates outside the acceptable range, the permittee shall immediately identify, correct or repair any malfunction and record in a log book the cause of the problem and the corrective action initiated to remedy operation outside the acceptable range.

[County Rule 210 §302.1]

(3) Once the regenerative thermal oxidizer is operational, the permittee shall document the valve timing system design, indicating the logic/algorithm by which the cycle time is calculated and the normal range of the cycle time. The permittee shall document the valve timing system design at the time of performance testing and shall document any changes made to the design or operation of the system immediately following the change.

(4) Once the regenerative thermal oxidizer is operational, the permittee shall document the minimum residence time for the oxidizer. The permittee shall

document the minimum residence time at the time of performance testing and shall document any changes made to the minimum residence time immediately following the change.

(5) Once the regenerative thermal oxidizer is operational, the permittee shall conduct quarterly inspections of the external structural integrity of the regenerative thermal oxidizer and corresponding ductwork to ensure proper operation, and the permittee shall conduct annual inspections of the internal structural integrity of the regenerative thermal oxidizer including the valves to ensure proper functioning. The Permittee shall log all inspections, including the date when the inspection was made, identify the oxidizer, name or initials of the person who made the inspection, and any other related information. The permittee shall immediately identify, correct or repair any malfunction and record in a log book the cause of the problem and the corrective action initiated to remedy the malfunction.

[County Rule 210 §302.1]

b) The Permittee shall make a permanent record in a maintenance log of the maintenance actions taken, within 24 hours of completion of the action, for each day or period in which the O&M Plan requires that maintenance be performed.

[County Rule 210 §302.1]

c) The Permittee shall enter an explanation into the maintenance log for scheduled maintenance that is not performed during the period designated for such maintenance in the O&M plan.

[County Rule 210 §302.1]

d) Prior to the completion of installation of the new regenerative thermal oxidizer and the corresponding ductwork, the Permittee shall record the date and time period when the catalytic oxidizer is not operating. The Permittee shall also make a record indicating whether or not beverage cans were processed through the inside bake ovens associated with Production Lines 2 and 3 while the catalytic oxidizer was not operating.

After completion of installation of the new regenerative thermal oxidizer and the corresponding ductwork, the Permittee shall record the date and time period when the regenerative thermal oxidizer is not operating. The Permittee shall also make a record indicating whether or not beverage cans were processed through the inside spray machines or inside bake ovens associated with Production Lines 2 and 3 while the regenerative thermal oxidizer was not operating.

[County Rule 210 §302.1]

e) Prior to the completion of installation of the new regenerative thermal oxidizer and the corresponding ductwork, on an annual basis, the Permittee shall send a section of the catalyst bed to the supplier or manufacturer for testing. If the supplier/manufacturer determines that the catalyst bed requires cleaning or reactivation, the Permittee shall have the catalyst bed cleaned or reactivated. The Permittee shall maintain documents from the manufacturer/supplier indicating results of catalyst testing, cleaning, and or reactivation.

Once the catalytic oxidizer has been permanently replaced by the regenerative thermal oxidizer, the permittee is no longer required to meet the terms of this condition (Title V Permit V95-005 Condition 20.D.4.e).

[County Rule 210 §302.1]

5) VOC Handling and Disposal Monitoring Requirements:

a) On a weekly basis, the Permittee shall conduct an inspection of the facility to monitor for compliance with Cleanup of Application Equipment requirements and the Handling and Disposal of VOC requirements pursuant to these permit conditions.

b) The Permittee shall maintain a log of the weekly inspection indicating, at a minimum, the following information:
(1) Date of inspection;
(2) Name of person conducting inspection;
(3) A statement indicating whether all VOC-containing materials intended for disposal, including but not limited to, rags, waste coatings, waste brushes, waste rollers, waste applicators, waste solvents, and their residues, are stored in closed, leakfree containers and which remain covered when not in use;
(4) A statement indicating whether containers storing VOC-containing materials are legibly labeled with their contents;
(5) A description of any corrective action taken.

[County Rule 210 §302.1]

6) Spray Coating Monitoring and Recordkeeping Requirements:

a) Daily pressure differential readings shall be taken and recorded for the inside spray machines baghouse every day that the facility operates. The Permittee shall log all pressure differential readings, including the date when the reading was taken, identify the baghouse, name or initials of the person who took the reading, and any other related information. The Permittee shall immediately investigate the cause of any readings outside the range of 1.0 to 6.0 inches of water for the baghouse pressure. The permittee shall immediately identify, correct or repair the problem and record in a log book the cause of the problem and the corrective action initiated to remedy the abnormal pressure differential reading.

[County Rule 210 §302.1]

If the frequency of measurement of a pressure differential outside the applicable pressure differential range of 1.0 to 6.0 inches of water or other information indicate that the baghouse is not being operated in accordance with the O&M plan most recently approved by the Control Officer, the Department may require the Permittee to submit a Corrective Action Plan (CAP).

[County Rule 200 §309]

b) The Permittee shall maintain a log of the weekly inspection indicating, at a minimum, the following information:
(1) Date of inspection;
(2) Name of person conducting inspection;
(3) Condition of the baghouse filter bags and ductwork;
(4) A statement indicating whether gaps, sags, or holes were present in any of the filter bags or ductwork at the time the inspection took place; and

(5) Description of repairs, replacements, or any other corrective action taken. [County Rule 210 §302.1]

E. Oil Mist Collection System

1) The Permittee shall maintain records of the operation of the oil mist collection systems. Records shall include dates of inspection, dates of service or maintenance, and daily static pressure gauge readings. The records shall account for any periods when the control system was not operating while the body makers were operating. If the oil mist collection systems are found to be operating outside of the parameters specified in either these Permit Conditions or the O&M Plan, the Permittee shall record the following:

a) The date and time when the oil mist collection system was found to be operating outside of its approved operating range and the date and time that it returned to operating within its approved ranges.

b) The results of the investigation into the cause of the excursion outside of the approved operating range.

c) A description of any corrective actions taken to return the oil mist collections system to normal operation. If the oil mist collection system returned to normal operation without any actions by the Permittee, that fact shall also be recorded.

[County Rule 210 §302.1]

2) The Permittee shall maintain monthly records of the amount of oil coolant used associated with Body Makers #11 – 19 and #21 – 29. In addition, the Permittee shall maintain current Material Safety Data Sheets (MSDS) for the oil coolant, including the density and the VOC content of the oil coolant.

[County Rule 210 §302.1]

21. REPORTING REQUIREMENTS

A. Semiannual Monitoring Report [County Rule 210 §302.1e]

**NOTE: Additional reporting requirements are found in the general conditions of this permit.*

The Permittee shall file semiannual monitoring reports with the Control Officer, Attn: Large Source Compliance Supervisor. The initial reporting period shall begin on the permit issuance date and shall cover a period of 6 months or less. The second and subsequent reporting periods shall be in 6-month intervals after the end of the initial reporting period. The semiannual monitoring reports shall be filed by the end of the month following the reporting period. Each report shall cover all instances of deviations from these permit conditions during the reporting period, the cause of the deviations if any were present, and any applicable corrective actions taken. If no deviations were observed, a statement to that effect will satisfy these requirements. The monitoring report shall also contain the following information at a minimum:

1) Visible Emissions

a) Dates on which visible emissions observations were taken;
b) Name of the observer;
c) Whether or not visible emissions were present;

d) The opacity of visual emissions determined by a Method 9 opacity reading, if applicable;
e) A description of any corrective actions taken, including the date such action was taken;
f) Name of individual certified as Method 9, opacity reader, which includes date of last certification, and company/agency providing the certification; and
g) Any other related information.

2) Gaseous and Odorous Air Contaminants
The Permittee shall include a copy of the portion of the odor log, which covers the applicable 6-month reporting period in each of the semiannual compliance reports. If no complaints were received during the reporting period, a statement to that effect may be substituted for the copy of the odor log.

3) Solvent Cleaning
a) Records indicating each instance of noncompliance discovered during the weekly inspections required pursuant to Monitoring and Recordkeeping Requirements associated with solvent cleaning operations. These records shall also include the date non-compliance occurred, any corrective actions taken, and the date such actions were completed. If no noncompliance instances occurred during the reporting period, the Permittee shall include a statement indicating such fact in the semiannual compliance monitoring report.

b) A summary of the amount of cleaning-solvent used during each month of the reporting period.

4) Beverage Can Coating
a) A statement indicating the compliance status with respect to the "current lists" required under Monitoring and Recordkeeping Requirements associated with beverage can coating operations. For each instance of noncompliance, the Permittee shall specifically indicate the nature of the noncompliance issue, corrective action taken, including the date of such action.

b) Monthly and, if applicable weekly coating usage records indicating the amount of each coating used that complies with the VOC limits in Table 1 of these permit conditions, and daily usage records indicating the amount of each coating used that exceeds the VOC limits in Table 1.

c) Records of each instance in which the volume-weighted average of the total mass of VOC per volume of coating solids exceeded the limit specified in Permit Condition 18.C.3. If no such instances occurred, the Permittee shall include a statement indicating such fact in the semiannual compliance monitoring report.

d) Monthly and, if applicable, weekly calculations indicating the 12-month rolling total VOC emissions.

e) For reports covering periods prior to the completion of installation of the new regenerative thermal oxidizer and the corresponding ductwork, a summary of records indicating each instance that the catalytic oxidizer was not operating, along with records indicating whether or not beverage cans were being processed through the inside bake ovens of Production Lines 2 and 3 while the catalytic oxidizer was not operating. If there were no instances when the catalytic oxidizer was not

operating, the Permittee shall include a statement indicating such fact in the semiannual monitoring report.

For reports covering periods after completion of installation of the new regenerative thermal oxidizer and the corresponding ductwork, a summary of records indicating each instance that the regenerative thermal oxidizer was not operating, along with records indicating whether or not beverage cans were being processed through the inside spray machines and inside bake ovens of Production Lines 2 and 3 while the regenerative thermal oxidizer was not operating. If there were no instances when the regenerative thermal oxidizer was not operating, the Permittee shall include a statement indicating such fact in the semiannual monitoring report.

f) For reports covering periods prior to the completion of installation of the new regenerative thermal oxidizer and the corresponding ductwork, a copy of the maintenance log for the catalytic oxidizer and documentation from the catalyst supplier/manufacturer regarding testing, cleaning, and/or reactivation of the catalyst bed.

For reports covering periods after completion of installation of the new regenerative thermal oxidizer and the corresponding ductwork, a copy of the maintenance log for the regenerative thermal oxidizer.

g) A copy of the weekly inspection log required pursuant to the VOC Handling and Disposal Monitoring Requirements associated with beverage can coating operations.

h) A copy of the weekly inspection log required pursuant to the Spray Coating Monitoring and Recordkeeping Requirements associated with beverage can coating operations.

5) Natural Gas Combustion
The Permittee shall notify the Department by filing an application for a permit revision prior to changing the fuel type used to operate boilers and/or heaters.

[County rule 210 §405.1f]

6) Oil Mist Collection System
   a) Records of each instance including the date and time when the oil mist collection system was found to be operating outside of its approved operating range and the date and time that it returned to operating within its approved ranges.
   b) The results of the investigation into the cause of the excursion outside of the approved operating range.
   c) A description of any corrective actions taken to return the oil mist collections system to normal operation. If the oil mist collection system returned to normal operation without any actions by the Permittee, that fact shall also be reported.
   d) If the oil mist collection system operated only within the approved operating range during the entire semiannual reporting period time frame, a statement of this fact shall be included in the report.

[County Rule 210 §302.1]

7) For reports covering periods prior to the completion of installation of the new regenerative thermal oxidizer and the corresponding ductwork

a) The Permittee shall report the date and time period when the catalytic oxidizer is not operating. The Permittee shall also make a record indicating whether or not beverage cans were processed through the inside bake ovens associated with Production Lines 2 and 3 while the catalytic oxidizer was not operating.
b) The date and time the operation of the catalytic oxidizer returned to normal operation.
c) A description of the corrective action taken to correct the problem.

For reports covering periods after completion of installation of the new regenerative thermal oxidizer and the corresponding ductwork
a) The Permittee shall report the date and time period when the regenerative thermal oxidizer is not operating. The Permittee shall also include in the report whether or not beverage cans were processed through the inside spray machines and inside bake ovens associated with Production Lines 2 and 3 while the regenerative thermal oxidizer was not operating.
b) The date and time the operation of the regenerative thermal oxidizer returned to normal operation.
c) A description of the corrective action taken to correct the problem.

[County Rule 210 §302.1]

B. Quarterly Monitoring Report

1) On a quarterly basis, the Permittee shall report to the Administrator and the Control Officer, (Attn: Large Source Compliance Supervisor), each instance in which the volume-weighted average of the total mass of VOC per volume of coating solids was greater than the limit specified in Permit Condition 18.C.3. If no such instances occurred during a particular quarter, a report stating this shall be submitted to the Administrator and the Control Officer semiannually.

[40 CFR §60.495(b)] [County Rule 360 §301.53]

2) The Permittee shall submit emission reports to the Department for each calendar quarter. The reports shall be submitted within fifteen (15) days after the end of each quarter. Reports shall summarize the coating consumption data required by Condition 20. D. 3), providing the quantity of emissions to the atmosphere (expressed in pounds) for VOC's and non-precursor organic compounds. Can production figures shall also be included. Data for each can coating line shall be reported separately.

[County Rule 360 §301.53]

22. TESTING REQUIREMENTS

**NOTE: All test protocols, notifications and reports required by this permit condition should be addressed to the attention of the Air Quality Technical Services Unit Manager.*

A. Catalytic Oxidizer and Regenerative Thermal Oxidizer:

The Permittee shall conduct a performance test on the catalytic oxidizer (HIRT Serial No. 611B1089) within 180 days after issuance of the original Title V permit. The Permittee shall conduct a performance test on the regenerative thermal oxidizer within 60 days after the regenerative thermal oxidizer has achieved the capability to operate on a sustained basis but no later than 180 days after initial start-up. Testing for both oxidizers shall be conducted in order to determine the VOC destruction efficiency of the oxidizer and the VOC capture efficiency of the oxidizer. Capture efficiency shall be determined with respect to the VOC emissions from the inside spray coating operations associated with Production Lines 2 and 3, including the inside spray machines, flashoff areas, and the inside bake ovens. Testing shall

verify that the Permittee is capable of operating the VOC emission control system at an overall VOC reduction efficiency of at least 81%, as required in these permit conditions. In addition, the permittee shall measure the concentration of nitrogen oxide (NOx) and carbon monoxide (CO) in the exhaust stream from the catalytic oxidizer for emission factor verification, and from the regenerative thermal oxidizer for demonstration of compliance with the RACT requirements of these Permit Conditions, as well as emission factor verification.

1) The Permittee shall conduct testing for both oxidizers under both of the following operating scenarios:

   a) Testing scenario 1 shall occur while Production Lines 2 and 3 are operating and exhaust from the inside bake ovens from both Lines 2 (FECO Serial No. 15295) and 3 (MOCO Serial No. 6378) is being ducted to the oxidizer being tested. During the testing of the regenerative thermal oxidizer, Production Line 1 shall not be in operation (i.e., not processing cans) and all exhaust dampers associated with Production Line 1 equipment must be in their normal operating positions for periods when Production Line 1 is not processing cans.

   b) Testing scenario 2 for each oxidizer is as follows:
      (1) Catalytic Oxidizer: Testing shall occur while Production Line 3 is operating and the exhaust from the inside bake oven from Line 3 (MOCO Serial No. 6378) is being ducted to the catalytic oxidizer. During the testing of the catalytic oxidizer, Production Line 2 shall not be in operation (i.e., not processing cans). All exhaust dampers associated with Production Line 2 must be in their normal operating positions for periods when Production Line 2 is not processing cans. The natural gas firing status of the Line 2 inside bake oven must be maintained at the normal operating level for periods when production line 2 is not processing cans.
      (2) Regenerative Thermal Oxidizer: Testing shall occur while Production Line 3 is operating and the exhaust from the inside bake oven from Line 3 (MOCO Serial No. 6378) is being ducted to the regenerative thermal oxidizer. During the testing of the regenerative thermal oxidizer, Production Lines 1 and 2 shall not be in operation (i.e. not processing cans). All exhaust dampers associated with Production Lines 1 and 2 must be in their normal operating positions for periods when Production Lines 1 and 2 are not processing cans. The natural gas firing status of the Line 2 inside bake oven must be maintained at the normal operating level for periods when Production Line 2 is not processing cans.

[County Rule 200 §309] [County Rule 270 §401] [SIP Rule 27 §A]

2) Testing Conditions:
   a) Performance tests for both oxidizers shall be conducted while operating the oxidizer in accordance with these Permit Conditions and the most recently approved O&M Plan for that oxidizer.

   b) Performance tests shall be conducted while the Production Lines being tested are operating at a production rate representative of normal operations.

   c) During performance testing, the film thickness of the coating applied to the inside of the beverage cans shall be representative of normal operations.

d) The Permittee shall make available to the Control Officer such records as may be necessary to determine the conditions of the performance tests.

e) Operations during periods of start-up, shutdown, and malfunction shall not constitute representative conditions of performance tests unless otherwise specified in an applicable standard.

[County Rule 270 §403]

3) Test Methods and Procedures: The Permittee shall use the following methods and procedures to determine capture efficiency, destruction efficiency, and overall VOC reduction efficiency of the VOC abatement system, and the concentration of NOx and CO in the exhaust from the catalytic oxidizer.

a) The capture efficiency of the control system shall be determined by the following equation:

$$F = \frac{M_b}{\sum_{i=1}^{n} (M_o + M_d)_i},$$

where:

F = the capture efficiency of the control system (i.e., the fraction of total VOC used by the coating operations that enters the control device).

$M_o + M_d$ = the mass of VOC in coating and diluent VOC-solvent used in the inside spray coating operations associated with Production Line *i* during testing [kilograms]. $M_o + M_d$ shall be determined by the equation specified in 40 CFR §60.493(b)(1); however, the mass of VOC used shall be determined for the time period of the test, not for one calendar month as specified in 40 CFR §60.493(b)(1).

M_b = the mass of VOC entering the control device during testing [kilograms], determined by Method 25 (and its sub-methods) or an equivalent or alternate method approved by the Control Officer.

i = the identification number of the production line that is being exhausted to the control device during testing (i.e., Production Line 2 or Production Line 3).

b) The destruction efficiency of the control device shall be determined by the following equation:

$$E = \frac{\sum_{i=1}^{n} Q_{bi} C_{bi} - \sum_{j=1}^{m} Q_{aj} C_{aj}}{\sum_{i=1}^{n} Q_{bi} C_{bi}},$$

where:

E = the VOC destruction efficiency of the control device [fraction].

Q_a = the volumetric flow rate of each gas stream leaving the control device and entering the atmosphere [dry standard cubic meters per hour].

C_a = the VOC concentration in each gas stream leaving the control device and entering the atmosphere [parts per million as carbon], determined by Method 25 (and its sub-methods) or an equivalent or alternate method approved by the Control Officer.

Q_b = the volumetric flow rate of each gas stream entering the control device [dry standard cubic meters per hour].

C_b = the VOC concentration in each gas stream entering the control device [parts per million as carbon], determined by Method 25 (and its sub-methods) or an equivalent or alternate method approved by the Administrator and the Control Officer.

n = the number of vents before the control device.

m = the number of vents after the control device.

c) The overall reduction efficiency of the control system shall be determined by the following equation:

$R = E \times F$

where,

R = the overall reduction efficiency of the control system [fraction].
E = the VOC destruction efficiency of the control device [fraction].
F = the capture efficiency of the control system (i.e., the fraction of total VOC used by the coating operations that enters the control device).

d) The following reference methods are to be used in conjunction with Method 25 (and its sub-methods):

(a) Method 1 for sample and velocity traverses,
(b) Method 2 for velocity and volumetric flow rate,
(c) Method 3 for gas analysis, and
(d) Method 4 for stack gas moisture.

e) For Method 25 (and its sub-methods), the sampling time for each of the three runs must be at least 1 hour. The minimum sample volume must be at least 0.003 dscm, except that shorter sampling times and smaller volumes, when necessitated by process variables or other factor, shall be approved by the Administrator and the Control Officer.
Control Officer.

f) Method 7E and Method 10 (or alternate methods approved in writing by the Department) shall be used for determining the outlet concentrations of NOx and CO, respectively, from the exhaust stack of the catalytic oxidizer.

[County Rule 270 §402]
[SIP Rule 27 §B]

4) Test Protocol: The Permittee shall submit a test protocol to the Department for review and approval at least 30 days prior to the performance test.

[County Rule 270 §301.1] [SIP Rule 27 §B]

5) Notice of testing: The Permittee shall notify the Department in writing at least two weeks prior to each performance test to allow Department representatives to be present during testing. The notice shall include the date and time that the testing is to be conducted.

[County Rule 270 §404] [SIP Rule 27 §B]

6) Test Report: Within four weeks after completion of testing, the Permittee shall submit the final test report to the Administrator and the Department for review and approval. The final test report shall be in sufficient detail to allow a compliance determination to be made.

[County Rule 270 §301.1] [SIP Rule 27 §B]

Note: All test protocols, notifications and reports required to be submitted to the Department by this permit condition should be addressed to the attention of the Air Quality Technical Services Unit Manager.

B. Performance Test and Compliance Provisions (As required By NSPS, Subpart WW):
The Permittee shall conduct a performance test each calendar month for each of the following affected facilities: Production Line 2 Overvarnish Coating Operations; Production Line 3 Overvarnish Coating Operations; Production Line 1 Inside Spray Coating Operations; Production Line 2 Inside Spray Coating Operations; and Production Line 3 Inside Spray Coating Operations.

[40 CFR §60.493(b)] [County Rule 360 §301.53]

1) For each affected facility, the Permittee shall calculate the volume-weighted average VOC emissions discharged to the atmosphere during each calendar month by using the methods specified in 40 CFR §60.493(b)(1), unless each individual coating used by an affected facility has a VOC content equal to or less than the applicable limit specified in these permit conditions and no VOC-solvents are added to the coating during distribution or application.

[40 CFR §60.493(b)(1)] [County Rule 360 §301.53]

2) Where the value of the volume-weighted average mass of VOC per volume of solids discharged to the atmosphere is equal to or less than the applicable limit specified in these permit conditions, the affected facility is in compliance.

[40 CFR §60.493(b)(1)(iii)] [County Rule 360 §301.53]

23. COMPLIANCE PLAN [County Rule 210 §305.1g]

A. In order to achieve compliance with the requirement that the overspray removal efficiency at the inside spray machines be at least 92% by weight, the Permittee shall install ductwork

venting to a baghouse with the required removal efficiency at the exhaust side of the inside spray machine banks in accordance with the following compliance schedule.

Milestones	**Estimated Target Date**	**Final Completion Date**
Prepare project scope.	09-05-2003	Complete
Prepare and submit permit revision application for ductwork and baghouse.	11-30-2003	11-24-2003
Permit Revision Issuance	8-30-2004	Date of Issuance of this Permit Revision
Purchase the necessary capital equipment	9-30-2004	No later than 30 days after issuance of this permit revision
Construction and the Installation of ductwork and baghouse.	12-30-04	No later than 120 days after issuance of this permit revision
Final normal operation of ductwork and baghouse.	2-28-2005	No later than 180 days after issuance of this permit revision

B. On a monthly basis the Permittee shall submit a certified progress report to the Control Officer, Attn: Large Source Compliance Supervisor. The report shall contain, at a minimum, the following information:

1) Dates when the milestones specified in paragraph A of this permit condition were achieved; and

2) An explanation of why any dates in the schedule of compliance were not or will not be met, any preventive or corrective measures adopted.

C. The Permittee shall submit an application for a significant revision to this permit not less than 18 months prior to the compliance date specified in 40 CFR Part 63 Subpart KKKK. The significant permit revision application shall identify in detail the options the permittee will utilize to demonstrate compliance with the applicable provisions of 40 CFR Part 63 Subpart KKKK.

24. MAXIMUM AVAILABLE CONTROL TECHNOLOGY (MACT)

[County Rule 210 §305.1g] [40 CFR §63, Subpart KKKK]

By the compliance date specified in 40 CFR §63, Subpart KKKK [National Emission Standards for Hazardous Air Pollutants: Surface Coating of Metal Cans], which is 3 years after the publication of the final MACT Subpart KKKK rule in the Federal Register, the Permittee shall comply with all applicable requirements of 40 CFR §63, Subpart KKKK. These requirements are included in this permit condition as follows:

Subpart KKKK–National Emission Standards for Hazardous Air Pollutants: Surface Coating of Metal Cans

Sec.

Subpart KKKK–National Emission Standards for Hazardous Air Pollutants: Surface Coating of Metal Cans

What This Subpart Covers

§63.3480 What is the purpose of this subpart?

This subpart establishes national emission standards for hazardous air pollutants (NESHAP) for metal can surface coating facilities.

This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations.

§63.3481 Am I subject to this subpart?

(a) Except as provided in paragraph (c) of this section, the source category to which this subpart applies is surface coating of metal cans and ends (including decorative tins) and metal crowns and closures. It includes the subcategories listed in paragraphs (a)(1) through (4) of this section. Surface coating is the application of coatings to a substrate using, for example, spray guns or dip tanks.

(1) One and two-piece draw and iron can body coating. The one and two-piece draw and iron can body coating subcategory includes all coating processes involved in the manufacture of can bodies by the draw and iron process. This subcategory includes three distinct coating type segments reflecting the coatings appropriate for cans with different end uses. Those are two-piece beverage can body coatings, two-piece food can body coatings, and one-piece aerosol can body coatings.

(2) Sheetcoating. The sheetcoating subcategory includes all of the flat metal sheetcoating operations associated with the manufacture of three-piece cans, decorative tins, crowns, and closures.

(3) Three-piece can body assembly coating. The three-piece can body assembly coating subcategory includes all of the coating processes involved in the assembly of three-piece metal can bodies. The subcategory includes five distinct coating type segments reflecting the coatings appropriate for cans with different end uses. Those are inside spray on food cans, aseptic side seam stripes on food cans, nonaseptic side seam stripes on food cans, side seam stripes on general line nonfood cans, and side seam stripes on aerosol nonfood cans.

(4) End coating. The end coating subcategory includes the application of end seal compounds and repair spray coatings to metal can ends. This subcategory includes three distinct coating type segments reflecting the end seal compounds and repair sprays appropriate for can ends with different end uses. Those are aseptic end seal compounds, nonaseptic end seal compounds, and repair spray coatings.

(b) You are subject to this subpart if you own or operate a new, reconstructed, or existing affected source, as defined in §63.3482, that uses 5,700 liters (1,500 gallons (gal)) per year, or more, of coatings in the source category defined in paragraph (a) of this section and that is a major source, is located at a major source, or is part of a major source of emissions of hazardous air pollutants (HAP). A major source of HAP emissions is any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit any single HAP at a rate of 9.07 megagrams (Mg) (10 tons) or more per year or any combination of HAP at a rate of 22.68 Mg (25 tons) or more per year.

(c) This subpart does not apply to surface coating that meets the criteria of paragraphs (c)(1) through (5) of this section.

(1) Surface coating conducted at a source that uses only coatings, thinners, and cleaning materials that contain no organic HAP, as determined according to §63.3521(a).

(2) Surface coating subject to any other NESHAP in this part as of [INSERT DATE OF PUBLICATION OF THIS FINAL RULE IN THE FEDERAL REGISTER].

(3) Surface coating and cleaning activities that use research or laboratory equipment or that are part of janitorial, building, and facility maintenance operations.

(4) Surface coating of continuous metal coil that may subsequently be used in manufacturing cans. Subpart SSSS of this part covers surface coating performed on a continuous metal coil substrate.

(5) Surface coating of metal pails, buckets, and drums. Future subpart MMMM of this part will cover surface coating of all miscellaneous metal parts and products not explicitly covered by another subpart.

63.3482 What parts of my plant does this subpart cover?

(a) This subpart applies to each new, reconstructed, and existing affected source.

(b) The affected source is the collection of all of the items listed in paragraphs (b)(1) through (4) of this section that are used for surface coating of metal cans and ends (including decorative tins), or metal crowns or closures:

(1) All coating operations as defined in §63.3561;

(2) All storage containers and mixing vessels in which coatings, thinners, and cleaning materials are stored or mixed;

(3) All manual and automated equipment and containers used for conveying coatings, thinners, and cleaning materials; and

(4) All storage containers and all manual and automated equipment and containers used for conveying waste materials generated by a coating operation.

(c) An affected source is a new affected source if you commenced its construction after January 15, 2003 by installing new coating equipment. New coating equipment is equipment used to perform metal can surface coating at a facility where no metal can surface coating was previously performed and the construction is of a completely new metal can surface coating source where previously no metal can surface coating source had existed.

(d) An affected source is reconstructed if you meet the criteria as defined in §63.2.

(e) An affected source is existing if it is not new or reconstructed.

§63.3483 When do I have to comply with this subpart?

The date by which you must comply with this subpart is called the compliance date. The compliance date for each type of affected source is specified in paragraphs (a) through (c) of this section. The compliance date begins the initial compliance period during which you conduct the initial compliance demonstration described in §§63.3520, 63.3530, 63.3540, and 63.3550.

(a) For a new or reconstructed affected source, the compliance date is the applicable date in paragraph (a)(1) or (2) of this section.

(1) If the initial startup of your new or reconstructed affected source is before [INSERT DATE OF PUBLICATION OF THIS FINAL RULE IN THE FEDERAL REGISTER], the compliance date is [INSERT DATE OF PUBLICATION OF THIS FINAL RULE IN THE FEDERAL REGISTER].

(2) If the initial startup of your new or reconstructed affected source occurs after [INSERT DATE OF PUBLICATION OF THIS FINAL RULE IN THE FEDERAL REGISTER], the compliance date is the date of initial startup of your affected source.

(b) For an existing affected source, the compliance date is [INSERT DATE 3 YEARS AFTER DATE OF PUBLICATION OF THIS FINAL RULE IN THE FEDERAL REGISTER].

(c) For an area source that increases its emissions or its potential to emit such that it becomes a major source of HAP emissions, the compliance date is specified in paragraphs (c)(1) and (2) of this section.

(1) For any portion of the source that becomes a new or reconstructed affected source subject to this subpart, the compliance date is the date of initial startup of the affected source or [INSERT DATE OF PUBLICATION OF THIS FINAL RULE IN THE FEDERAL REGISTER], whichever is later.

(2) For any portion of the source that becomes an existing affected source subject to this subpart, the compliance date is the date 1 year after the area source becomes a major source or [INSERT DATE 3 YEARS AFTER DATE OF PUBLICATION OF THIS FINAL RULE IN THE FEDERAL REGISTER], whichever is later.

(d) You must meet the notification requirements in §63.3510 according to the dates specified in that section and in subpart A of this part. Some of the notifications must be submitted before the compliance dates described in paragraphs (a) through (c) of this section.

Emission Limitations

§63.3490 What emission limits must I meet?

(a) For a new or reconstructed affected source, you must limit organic HAP emissions to the atmosphere to no more than the emission limit(s) in Table 1 to this subpart that apply to you during each 12-month compliance period, determined according to the requirements in §63.3521, §63.3531, or §63.3541; or if you control emissions with an emissions control system using the control efficiency/outlet concentration option as specified in §63.3491(d), you must reduce organic HAP emissions to the atmosphere to no more than the limit(s) in Table 3 to this subpart, determined according to the requirements of §63.3551. If you perform surface

coating in more than one subcategory or utilize more than one coating type within a subcategory, then you must meet the individual emission limit(s) for each subcategory and coating type included.

(b) For an existing affected source, you must limit organic HAP emissions to the atmosphere to no more than the emission limit(s) in Table 2 to this subpart that apply to you during each 12-month compliance period, determined according to the requirements in §63.3521, §63.3531, or §63.3541; or if you control emissions with an emissions control system using the control efficiency/outlet concentration option as specified in §63.3491(d), you must reduce organic HAP emissions to the atmosphere to no more than the limit(s) in Table 3 to this subpart, determined according to the requirements of §63.3551. If you perform surface coating in more than one subcategory or utilize more than one coating type within a subcategory, then you must meet the individual emission limit(s) for each subcategory and coating type included.

(c) If you perform surface coating in different subcategories as described in §63.3481(a)(1) through (4), then the coating operations in each subcategory constitute a separate affected source, and you must conduct separate compliance demonstrations for each applicable subcategory and coating type emission limit in paragraphs (a) and (b) of this section and reflect those separate determinations in notifications, reports, and records required by §§63.3510, 63.3511, and 63.3512, respectively.

§63.3491 What are my options for meeting the emission limits?

You must include all coatings and thinners used in all surface coating operations within a subcategory or coating type segment when determining whether the organic HAP emission rate is equal to or less than the applicable emission limit in §63.3490. To make that determination, you must use at least one of the four compliance options listed in paragraphs (a) through (d) of this section. You may apply any of the compliance options to an individual coating operation or to multiple coating operations within a subcategory or coating type segment as a group. You may use different compliance options for different coating operations or at different times on the same coating operation. However, you may not use different compliance options at the same time on the same coating operation. If you switch between compliance options for any coating operation or group of coating operations, you must document that switch as required by §63.3512(c), and you must report it in the next semiannual compliance report required in §63.3511.

(a) Compliant material option. Demonstrate that the organic HAP content of each coating used in the coating operation(s) is less than or equal to the applicable emission limit in §63.3490, and that each thinner used contains no organic HAP. You must meet all the requirements of §§63.3520, 63.3521, and 63.3522 to demonstrate compliance with the emission limit using this option.

(b) Emission rate without add-on controls option. Demonstrate that, based on the coatings and thinners used in the coating operation(s), the organic HAP emission rate for the coating operation(s) is less than or equal to the applicable emission limit in §63.3490, calculated as a rolling 12-month emission rate and determined on a monthly basis. You must meet all the requirements of §§63.3530, 63.3531, and 63.3532 to demonstrate compliance with the emission limit using this option.

(c) Emission rate with add-on controls option. Demonstrate that, based on the coatings and thinners used in the coating operation(s) and the emission reductions achieved by emission capture systems and add-on controls, the organic HAP emission rate for the coating operation(s) is less than or equal to the applicable emission limit in §63.3490, calculated as a rolling 12-month emission rate and determined on a monthly basis. If you use this compliance option, you must also demonstrate that all emission capture systems and add-on control devices for the coating operation(s) used for purposes of complying with this subpart meet the operating limits required in §63.3492, except for solvent recovery systems for which you conduct liquid-liquid material balances according to §63.3541(i), and that you meet the work practice standards required in §63.3493. You must meet all the requirements of §§63.3540 through 63.3547 to demonstrate compliance with the emission limits, operating limits, and work practice standards using this option.

(d) Control efficiency/outlet concentration option.
Demonstrate that, based on the emission reductions achieved by emission capture systems and add-on controls, total HAP emissions measured as total hydrocarbon (THC) are reduced by 95 percent or greater for existing sources, or 97 percent or greater for new or reconstructed sources, or that outlet THC emissions are less than or equal to 20 parts per million by volume, dry basis (ppmvd). If you use this compliance option, you must have a capture device that meets EPA Method 204 of 40 CFR part 51, Appendix M criteria for a permanent total enclosure (PTE). You must also demonstrate that all emission capture systems and add-on control devices for the coating operation(s) used for purposes of complying with this subpart meet the operating limits required in §63.3492, and that you meet the work practice standards required in §63.3493. You must meet all the requirements of §§63.3550 through 63.3557 to demonstrate compliance with the emission limits, operating limits, and work practice standards using this option.

§63.3492 What operating limits must I meet?
(a) For any coating operation(s) on which you use the compliant material option or the emission rate without add-on controls option, you are not required to meet any operating limits.

(b) For any controlled coating operation(s) on which you use the emission rate with add-on controls option or the control efficiency/outlet concentration option, except those for which you use a solvent recovery system and conduct a liquid-liquid material balance according to §63.3541(i), you must meet the operating limits specified in Table 4 to this subpart. Those operating limits apply to the emission capture and control systems for the coating operation(s) used for purposes of complying with this subpart. You must establish the operating limits during the performance test according to the requirements in §63.3546 or §63.3556, and you must meet the operating limits at all times after you establish them.

(c) If you use an add-on control device other than those listed in Table 4 to this subpart or wish to monitor an alternative parameter and comply with a different operating limit, you must apply to the Administrator for approval of alternative monitoring under §63.8(f).

§63.3493 What work practice standards must I meet?

(a) For any coating operation(s) for which you use the compliant material option or the emission rate without add-on controls option, you are not required to meet any work practice standards.

(b) If you use the emission rate with add-on controls option or the control efficiency/outlet concentration option to comply with the emission limitations, you must develop and implement a work practice plan to minimize organic HAP emissions from the storage, mixing, and conveying of coatings, thinners, and cleaning materials used in, and waste materials generated by, the coating operation(s) for which you use those options; or you must meet an alternative standard as provided in paragraph (c) of this section. The plan must specify practices and procedures to ensure that, at a minimum, the elements specified in paragraphs (b)(1) through (5) of this section are implemented.

(1) All organic-HAP-containing coatings, thinners, cleaning materials, and waste materials must be stored in closed containers.

(2) Spills of organic-HAP-containing coatings, thinners, cleaning materials, and waste materials must be minimized.

(3) Organic-HAP-containing coatings, thinners, cleaning materials, and waste materials must be conveyed from one location to another in closed containers or pipes.

(4) Mixing vessels which contain organic-HAP-containing coatings and other materials must be closed except when adding to, removing, or mixing the contents.

(5) Emissions of organic HAP must be minimized during cleaning of storage, mixing, and conveying equipment.

(c) As provided in §63.6(g), we, the U.S. Environmental Protection Agency (U.S. EPA), may choose to grant you permission to use an alternative to the work practice standards in this section.

General Compliance Requirements

§63.3500 What are my general requirements for complying with this subpart?

(a) You must be in compliance with the emission limitations in this subpart as specified in paragraphs (a)(1) and (2) of this section.

(1) Any coating operation(s) for which you use the compliant material option or the emission rate without add-on controls option, as specified in §63.3491(a) and (b), must be in compliance with the applicable emission limit in §63.3490.

(2) Any coating operation(s) for which you use the emission rate with add-on controls option, as specified in §63.3491(c), or the control efficiency/outlet concentration option, as specified in §63.3491(d), must be in compliance with the emission limitations as specified in paragraphs (a)(2)(i) through (iii) of this section.

(i) The coating operation(s) must be in compliance with the applicable emission limit in §63.3490 at all times.

(ii) The coating operation(s) must be in compliance with the operating limits for emission capture systems and add-on control devices required by §63.3492 at all times, except for those for which you use a solvent recovery system and conduct liquid-liquid material balances according to §63.3541(i). The operating limits apply only to capture systems and control devices used for purposes of complying with this subpart.

(iii) The coating operation(s) must be in compliance with the work practice standards in §63.3493 at all times.

(b) You must always operate and maintain your affected source, including all air pollution control and monitoring equipment you use for purposes of complying with this subpart, according to the provisions in §63.6(e)(1)(i).

(c) If your affected source uses an emission capture system and add-on control device for purposes of complying with this subpart, you must develop and implement a written startup, shutdown, and malfunction plan (SSMP) according to the provisions in §63.6(e)(3). The plan must address startup, shutdown, and corrective actions in the event of a malfunction of the emission capture system or the add-on control device. The plan must also address any coating operation equipment that may cause increased emissions or that would affect capture efficiency if the process equipment malfunctions, such as conveyors that move parts among enclosures.

§63.3501 What parts of the General Provisions apply to me?
Table 5 to this subpart shows which parts of the General Provisions in §§63.1 through 63.15 apply to you.

Notifications, Reports, and Records

§63.3510 What notifications must I submit?
(a) General. You must submit the notifications in §§63.7(b) and (c), 63.8(f)(4), and 63.9(b) through (e) and (h) that apply to you by the dates specified in those sections, except as provided in paragraphs (b) and (c) of this section.

(b) Initial notification. You must submit the Initial Notification required by §63.9(b) for a new or reconstructed affected source no later than 120 days after initial startup or 120 days after [INSERT DATE OF PUBLICATION OF THIS FINAL RULE IN THE FEDERAL REGISTER], whichever is later. For an existing affected source, you must submit the Initial Notification no later than [INSERT DATE 1 YEAR AFTER DATE OF PUBLICATION OF THIS FINAL RULE IN THE FEDERAL REGISTER].

(c) Notification of compliance status. You must submit the Notification of Compliance Status required by §63.9(h) no later than 30 calendar days following the end of the initial compliance period described in §63.3520, §63.3530, §63.3540, or §63.3550 that applies to your affected source. The Notification of Compliance Status must contain the information specified in paragraphs (c)(1) through (9) of this section and in §63.9(h).

(1) Company name and address.

(2) Statement by a responsible official with that official's name, title, and signature certifying the truth, accuracy, and completeness of the content of the report.

(3) Date of the report and beginning and ending dates of the reporting period. The reporting period is the initial compliance period described in §63.3520, §63.3530, §63.3540, or §63.3550 that applies to your affected source.

(4) Identification of the compliance option or options specified in §63.3491 that you used on each coating operation in the affected source during the initial compliance period.

(5) Statement of whether or not the affected source achieved the emission limitations for the initial compliance period.

(6) If you had a deviation, include the information in paragraphs (c)(6)(i) and (ii) of this section.

(i) A description and statement of the cause of the deviation.

(ii) If you failed to meet the applicable emission limit in §63.3490, include all the calculations you used to determine the kilogram (kg) organic HAP emitted per liter of coating solids used. You do not need to submit information provided by the materials suppliers or manufacturers or test reports.

(7) For each of the data items listed in paragraphs (c)(7)(i) through (iv) of this section that is required by the compliance option(s) you used to demonstrate compliance with the emission limit, include an example of how you determined the value, including calculations and supporting data. Supporting data can include a copy of the information provided by the supplier or manufacturer of the example coating or material or a summary of the results of testing conducted according to §63.3521(a), (b), or (c). You do not need to submit copies of any test reports.

(i) Mass fraction of organic HAP for one coating and for one thinner.

(ii) Volume fraction of coating solids for one coating.

(iii) Density for one coating and one thinner, except that if you use the compliant material option, only the example coating density is required.

(iv) The amount of waste materials and the mass of organic HAP contained in the waste materials for which you are claiming an allowance in Equation 1 of §63.3531.

(8) The calculation of kg organic HAP emitted per liter of coating solids used for the compliance option(s) you used, as specified in paragraphs (c)(8)(i) through (iii) of this section.

(i) For the compliant material option, provide an example calculation of the organic HAP content for one coating, using Equation 1 of §63.3521.

(ii) For the emission rate without add-on controls option, provide the calculation of the total mass of organic HAP emissions for each month, the calculation of the total volume of coating solids used each month, and the calculation of the 12-month organic HAP emission rate, using Equations 1, 1A through 1C, 2, and 3, respectively, of §63.3531.

(iii) For the emission rate with add-on controls option, provide the calculation of the total mass of organic HAP emissions for the coatings and thinners used each month, using Equations 1 and 1A through 1C of §63.3531; the calculation of the total volume of coating solids used each month, using Equation 2 of §63.3531; the calculation of the mass of organic HAP emission reduction each month by emission capture systems and add-on control devices, using Equations 1 and 1A through 1D of §63.3541, and Equations 2, 3, and 3A through 3C of §63.3541, as applicable; the calculation of the total mass of organic HAP emissions each month, using Equation 4 of §63.3541, as applicable; and the calculation of the 12-month organic HAP emission rate, using Equation 5 of §63.3541.

(9) For the emission rate with add-on controls option or the control efficiency/outlet concentration option, you must include the information specified in paragraphs (c)(9)(i) through (iv) of this section. The requirements in paragraphs (c)(9)(i) through (iii) of this section do not apply to solvent recovery systems for which you conduct liquid-liquid material balances according to §63.3541(i).

(i) For each emission capture system, a summary of the data and copies of the calculations supporting the determination that the emission capture system is a PTE or a measurement of the emission capture system efficiency. Include a description of the protocol followed for measuring capture efficiency, summaries of any capture efficiency tests conducted, and any calculations supporting the capture efficiency determination. If you use the data quality objective (DQO) or lower confidence limit (LCL) approach, you must also include the statistical calculations to show you meet the DQO or LCL criteria in appendix A to subpart KK of this part. You do not need to submit complete test reports.

(ii) A summary of the results of each add-on control device performance test. You do not need to submit complete test reports.

(iii) A list of each emission capture system’s and add-on control device’s operating limits and a summary of the data used to calculate those limits.

(iv) A statement of whether or not you developed and implemented the work practice plan required by §63.3493.

§63.3511 What reports must I submit?
(a) Semiannual compliance reports. You must submit semiannual compliance reports for each affected source according to the requirements of paragraphs (a)(1) through (7) of this section. The semiannual compliance reporting requirements may be satisfied by reports required under other parts of the Clean Air Act (CAA), as specified in paragraph (a)(2) of this section.

(1) Dates. Unless the Administrator has approved a different schedule for submission of reports under §63.10(a), you must prepare and submit each semiannual compliance report according to the dates specified in paragraphs (a)(1)(i) through (iv) of this section. Note that the information reported for each of the months in the reporting period will be based on the last 12 months of data prior to the date of each monthly calculation.

(i) The first semiannual compliance report must cover the first semiannual reporting period which begins the day after the end of the initial compliance period described in §63.3520, §63.3530, §63.3540, or §63.3550 that applies to your affected source and ends on June 30 or December 31, whichever occurs first following the end of the initial compliance period.

(ii) Each subsequent semiannual compliance report must cover the subsequent semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31.

(iii) Each semiannual compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period.

(iv) For each affected source that is subject to permitting regulations pursuant to 40 CFR part 70 or 40 CFR part 71, and if the permitting authority has established dates for submitting semiannual reports pursuant to 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), you may submit the first and subsequent compliance reports according to the dates the permitting authority has established instead of the date specified in paragraph (a)(1)(iii) of this section.

(2) Inclusion with title V report. Each affected source that has obtained a title V operating permit pursuant to 40 CFR part 70 or 40 CFR part 71 must report all deviations as defined in this subpart in the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A). If an affected source submits a semiannual compliance report pursuant to this section along with, or as part of, the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), and the semiannual compliance report includes all required information concerning deviations from any emission limitation in this subpart, its submission will be deemed to satisfy any obligation to report the same deviations in the semiannual monitoring report. However, submission of a semiannual compliance report shall not otherwise affect any obligation the affected source may have to report deviations from permit requirements to the permitting authority.

(3) General requirements. The semiannual compliance report must contain the information specified in paragraphs (a)(3)(i) through (v) of this section and the information specified in paragraphs (a)(4) through (7) and (c)(1) of this section that is applicable to your affected source.

(i) Company name and address.

(ii) Statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report.

(iii) Date of report and beginning and ending dates of the reporting period. The reporting period is the 6-month period ending on June 30 or December 31. Note that the information reported for each of the 6 months in the reporting period will be based on the last 12 months of data prior to the date of each monthly calculation.

(iv) Identification of the compliance option or options specified in §63.3491 that you used on each coating operation during the reporting period. If you switched between compliance options during the reporting period, you must report the beginning and ending dates you used each option.

(v) If you used the emission rate without add-on controls or the emission rate with add-on controls compliance option (§63.3491(b) or (c)), the calculation results for each rolling 12-month organic HAP emission rate during the 6-month reporting period.

(4) No deviations. If there were no deviations from the emission limitations, operating limits, or work practice standards in §§63.3490, 63.3492, and 63.3493 that apply to you, the semiannual compliance report must include a statement that there were no deviations from the emission limitations during the reporting period. If you used the emission rate with add-on controls option or the control efficiency/outlet concentration option and there were no periods during which the continuous parameter monitoring systems (CPMS) were out of control as specified in §63.8(c)(7), the semiannual compliance report must include a statement that there were no periods during which the CPMS were out of control during the reporting period.

(5) Deviations: compliant material option. If you used the compliant material option and there was a deviation from the applicable emission limit in §63.3490, the semiannual compliance report must contain the information in paragraphs (a)(5)(i) through (iv) of this section.

(i) Identification of each coating used that deviated from the emission limit, each thinner used that contained organic HAP, and the dates and time periods each was used.

(ii) The calculation of the organic HAP content (using Equation 1 of §63.3521) for each coating identified in paragraph (a)(5)(i) of this section. You do not need to submit background data supporting this calculation (e.g., information provided by coating suppliers or manufacturers, or test reports).

(iii) The determination of mass fraction of organic HAP for each coating and thinner identified in paragraph (a)(5)(i) of this section. You do not need to submit background data supporting this calculation (e.g., information provided by material suppliers or manufacturers, or test reports).

(iv) A statement of the cause of each deviation.

(6) Deviations: emission rate without add-on controls option. If you used the emission rate without add-on controls option and there was a deviation from the applicable emission limit in §63.3490, the semiannual

compliance report must contain the information in paragraphs (a)(6)(i) through (iii) of this section.

(i) The beginning and ending dates of each compliance period during which the 12-month organic HAP emission rate exceeded the applicable emission limit in §63.3490.

(ii) The calculations used to determine the 12-month organic HAP emission rate for the compliance period in which the deviation occurred. You must provide the calculations for Equations 1, 1A through 1C, 2, and 3 in §63.3531; and if applicable, the calculation used to determine mass of organic HAP in waste materials according to §63.3531(e)(3). You do not need to submit background data supporting these calculations (e.g., information provided by materials suppliers or manufacturers, or test reports).

(iii) A statement of the cause of each deviation.

(7) Deviations: emission rate with add-on controls option. If you used the emission rate with add-on controls option and there was a deviation from an emission limitation (including any periods when emissions bypassed the add-on control device and were diverted to the atmosphere), the semiannual compliance report must contain the information in paragraphs (a)(7)(i) through (xiv) of this section. That includes periods of startup, shutdown, and malfunction during which deviations occurred.

(i) The beginning and ending dates of each compliance period during which the 12-month organic HAP emission rate exceeded the applicable emission limit in §63.3490.

(ii) The calculations used to determine the 12-month organic HAP emission rate for each compliance period in which a deviation occurred. You must provide the calculation of the total mass of organic HAP emissions for the coatings and thinners used each month, using Equations 1 and 1A through 1C of §63.3531 and, if applicable, the calculation used to determine mass of organic HAP in waste materials according to §63.3531(e)(3); the calculation of the total volume of coating solids used each month, using Equation 2 of §63.3531; the calculation of the mass of organic HAP emission reduction each month by emission capture systems and add-on control devices, using Equations 1 and 1A through 1D of §63.3541, and Equations 2, 3, and 3A through 3C of §63.3541, as applicable; the calculation of the total mass of organic HAP emissions each month, using Equation 4 of §63.3541; and the calculation of the 12-month organic HAP emission rate, using Equation 5 of §63.3541. You do not need to submit the background data supporting these calculations (e.g., information provided by materials suppliers or manufacturers, or test reports).

(iii) The date and time that each malfunction started and stopped.

(iv) A brief description of the CPMS.

(v) The date of the latest CPMS certification or audit.

(vi) The date and time that each CPMS was inoperative, except for zero (low-level) and high-level checks.

(vii) The date, time, and duration that each CPMS was out of control, including the information in §63.8(c)(8).

(viii) The date and time period of each deviation from an operating limit in Table 4 to this subpart; date and time period of any bypass of the add-on control device; and whether each deviation occurred during a period of startup, shutdown, or malfunction or during another period.

(ix) A summary of the total duration of each deviation from an operating limit in Table 4 to this subpart and each bypass of the add-on control device during the semiannual reporting period and the total duration as a percent of the total source operating time during that semiannual reporting period.

(x) A breakdown of the total duration of the deviations from the operating limits in Table 4 to this subpart and bypasses of the add-on control device during the semiannual reporting period into those that were due to startup, shutdown, control equipment problems, process problems, other known causes, and other unknown causes.

(xi) A summary of the total duration of CPMS downtime during the semiannual reporting period and the total duration of CPMS downtime as a percent of the total source operating time during that semiannual reporting period.

(xii) A description of any changes in the CPMS, coating operation, emission capture system, or add-on control device since the last semiannual reporting period.

(xiii) For each deviation from the work practice standards, a description of the deviation; the date and time period of the deviation; and the actions you took to correct the deviation.

(xiv) A statement of the cause of each deviation.

(8) Deviations: control efficiency/outlet concentration option. If you used the control efficiency/outlet concentration option, and there was a deviation from an emission limitation (including any periods when emissions bypassed the add-on control device and were diverted to the atmosphere), the semiannual compliance report must contain the information in paragraphs (a)(8)(i) through (xii) of this section. This includes periods of startup, shutdown, and malfunction during which deviations occurred.

(i) The date and time that each malfunction started and stopped.

(ii) A brief description of the CPMS.

(iii) The date of the latest certification or audit of the CPMS.

(iv) The date and time that each CPMS was inoperative, except for zero (low-level) and high-level checks.

(v) The date, time, and duration that each CPMS was out-of-control, including the information in §63.8(c)(8).

(vi) The date and time period of each deviation from an operating limit in Table 4 to this subpart; date and time of any bypass of the add-on control device; and whether each deviation occurred during a period of startup, shutdown, or malfunction or during another period.

(vii) A summary of the total duration of each deviation from an operating limit in Table 4 to this subpart and each bypass of the add-on control device during the semiannual reporting period and the total duration as a percent of the total source operating time during that semiannual reporting period.

(viii) A breakdown of the total duration of the deviations from the operating limits in Table 4 to this subpart and bypasses of the add-on control device during the semiannual reporting period into those that were due to startup, shutdown, control equipment problems, process problems, other known causes, and other unknown causes.

(ix) A summary of the total duration of CPMS downtime during the semiannual reporting period and the total duration of CPMS downtime as a percent of the total source operating time during that semiannual reporting period.

(x) A description of any changes in the CPMS, coating operation, emission capture system, or add-on control device since the last semiannual reporting period.

(xi) For each deviation from the work practice standards, a description of the deviation; the date and time period of the deviation; and the actions you took to correct the deviation.

(xii) A statement of the cause of each deviation.

(b) Performance test reports. If you use the emission rate with add-on controls option or the control efficiency/outlet concentration option, you must submit reports of performance test results for emission capture systems and add-on control devices no later than 60 days after completing the tests as specified in §63.10(d)(2).

(c) Startup, shutdown, malfunction reports. If you used the emission rate with add-on controls option or the control efficiency/outlet concentration option and you had a startup, shutdown, or malfunction during the semiannual reporting period, you must submit the reports specified in paragraphs (c)(1) and (2) of this section.

(1) If your actions were consistent with your SSMP, you must include the information specified in §63.10(d) in the semiannual compliance report required by paragraph (a) of this section.

(2) If your actions were not consistent with your SSMP, you must submit an immediate startup, shutdown, and malfunction report as described in paragraphs (c)(2)(i) and (ii) of this section.

(i) You must describe the actions taken during the event in a report delivered by facsimile, telephone, or other means to the Administrator within 2 working days after starting actions that are inconsistent with the SSMP.

(ii) You must submit a letter to the Administrator within 7 working days after the end of the event, unless you have made alternative arrangements with the Administrator as specified in §63.10(d)(5)(ii). The letter must contain the information specified in §63.10(d)(5)(ii).

§63.3512 What records must I keep?

You must collect and keep records of the data and information specified in this section. Failure to collect and keep the records is a deviation from the applicable standard.

(a) A copy of each notification and report that you submitted to comply with this subpart and the documentation supporting each notification and report.

(b) A current copy of information provided by materials suppliers or manufacturers, such as manufacturer's formulation data, or test data used to determine the mass fraction of organic HAP and density for each coating and thinner and the volume fraction of coating solids for each coating. If you conducted testing to determine mass fraction of organic HAP, density, or volume fraction of coating solids, you must keep a copy of the complete test report. If you use information provided to you by the manufacturer or supplier of the material that was based on testing, you must keep the summary sheet of results provided to you by the manufacturer or supplier. You are not required to obtain the test report or other supporting documentation from the manufacturer or supplier.

(c) For each compliance period, the records specified in paragraphs (c)(1) through (4) of this section.

(1) A record of the coating operations at which you used each compliance option and the time periods (beginning and ending dates and times) you used each option.

(2) For the compliant material option, a record of the calculation of the organic HAP content for each coating, using Equation 1 of §63.3521.

(3) For the emission rate without add-on controls option, a record of the calculation of the total mass of organic HAP emissions for the coatings and thinners used each month, using Equations 1, 1A through 1C, and 2 of §63.3531 and, if applicable, the calculation used to determine mass of organic HAP in waste materials according to §63.3531(e)(3); the calculation of the total volume of coating solids used each month, using Equation 2 of §63.3531; and the calculation of each 12-month organic HAP emission rate, using Equation 3 of §63.3531.

(4) For the emission rate with add-on controls option, records of the calculations specified in paragraphs (c)(4)(i) through (v) of this section.

(i) The calculation of the total mass of organic HAP emissions for the coatings and thinners used each month, using Equations 1 and 1A through 1C of §63.3531 and, if applicable, the calculation used to determine mass of organic HAP in waste materials according to §63.3531(e)(3).

(ii) The calculation of the total volume of coating solids used each month, using Equation 2 of §63.3531.

(iii) The calculation of the mass of organic HAP emission reduction by emission capture systems and add-on control devices, using Equations 1 and 1A through 1D of §63.3541, and Equations 2, 3, and 3A through 3C of §63.3541, as applicable.

(iv) The calculation of the total mass of organic HAP emissions each month, using Equation 4 of §63.3541.

(v) The calculation of each 12-month organic HAP emission rate, using Equation 5 of §63.3541.

(5) For the control efficiency/outlet concentration option, records of the measurements made by the CPMS used to demonstrate compliance. For any coating operation(s) for which you use this option, you do not have to keep the records specified in paragraphs (d) through (g) of this section.

(d) A record of the name and volume of each coating and thinner used during each compliance period.

(e) A record of the mass fraction of organic HAP for each coating and thinner used during each compliance period.

(f) A record of the volume fraction of coating solids for each coating used during each compliance period.

(g) A record of the density for each coating used during each compliance period; and, if you use either the emission rate without add-on controls or the emission rate with add-on controls compliance option, the density for each thinner used during each compliance period.

(h) If you use an allowance in Equation 1 of §63.3531 for organic HAP contained in waste materials sent to or designated for shipment to a treatment, storage, and disposal facility (TSDF) according to §63.3531(e)(3) or otherwise managed in accordance with applicable Federal and State waste management regulations, you must keep records of the information specified in paragraphs (h)(1) through (3) of this section.

(1) The name and address of each TSDF or other applicable waste management location to which you sent waste materials for which you use an allowance in Equation 1 of §63.3531, a statement of which subparts under 40 CFR parts 262, 264, 265, and 266 apply to the facility and the date of each shipment.

(2) Identification of the coating operations producing waste materials included in each shipment and the month or months in which you used the allowance for these materials in Equation 1 of §63.3531.

(3) The methodology used in accordance with §63.3531(e)(3) to determine the total amount of waste materials sent to or the amount collected, stored, and designated for transport to a TSDF or other applicable waste management location each month and the methodology to determine the mass of organic HAP contained in these waste materials. That must include the sources for all data used in the determination, methods used to generate the data, frequency of testing or monitoring, and supporting calculations and documentation, including the waste manifest for each shipment.

(i) You must keep records of the date, time, and duration of each deviation.

(j) If you use the emission rate with add-on controls option or the control efficiency/outlet concentration option, you must keep the records specified in paragraphs (j)(1) through (8) of this section.

(1) For each deviation, a record of whether the deviation occurred during a period of startup, shutdown, or malfunction.

(2) The records in §63.6(e)(3)(iii) through (v) related to startup, shutdown, and malfunction.

(3) The records required to show continuous compliance with each operating limit specified in Table 4 to this subpart that applies to you.

(4) For each capture system that is a PTE, the data and documentation you used to support a determination that the capture system meets the criteria in Method 204 of appendix M to 40 CFR part 51 for a PTE and has a capture efficiency of 100 percent, as specified in §63.3544(a).

(5) For each capture system that is not a PTE, the data and documentation you used to determine capture efficiency according to the requirements specified in §§63.3543 and 63.3544(b) through (e) including the records specified in paragraphs (j)(5)(i) through (iii) of this section that apply to you.

(i) Records for a liquid-to-uncaptured-gas protocol using a temporary total enclosure or building enclosure. Records of the mass of total volatile hydrocarbon (TVH) as measured by Method 204A or F of appendix M to 40 CFR part 51 for each material used in the coating operation and the total TVH for all materials used during each capture efficiency test run including a copy of the test report. Records of the mass of TVH emissions not captured by the capture system that exited the temporary total enclosure (TTE) or building enclosure during each capture efficiency test run, as measured by Method 204D or E of appendix M to 40 CFR part 51, including a copy of the test report. Records documenting that the enclosure used for the capture efficiency test met the criteria in Method 204 of appendix M to 40 CFR part 51 for either a TTE or a building enclosure.

(ii) Records for a gas-to-gas protocol using a temporary total enclosure or a building enclosure. Records of the mass of TVH emissions captured by the emission capture system as measured by Method 204B or C of appendix M to 40 CFR part 51 at the inlet to the add-on control device including a copy of the test report. Records of the mass of TVH emissions not captured by the capture system that exited the TTE or building enclosure during each capture efficiency test run as measured by Method 204D or E of appendix M to 40 CFR part 51 including a copy of the test report. Records documenting that the enclosure used for the capture efficiency test met the criteria in Method 204 of appendix M to 40 CFR part 51 for either a TTE or a building enclosure.

(iii) Records for an alternative protocol. Records needed to document a capture efficiency determination using an alternative method or protocol as specified in §63.3544(e) if applicable.

(6) The records specified in paragraphs (j)(6)(i) and (ii) of this section for each add-on control device organic HAP destruction or removal efficiency determination as specified in §63.3545 or §63.3555.

(i) Records of each add-on control device performance test conducted according to §63.3543 or §63.3553 and §63.3545 or §63.3555.

(ii) Records of the coating operation conditions during the add-on control device performance test showing that the performance test was conducted under representative operating conditions.

(7) Records of the data and calculations you used to establish the emission capture and add-on control device operating limits as specified in §63.3546 or §63.3556 and to document compliance with the operating limits as specified in Table 4 to this subpart.

(8) A record of the work practice plan required by §63.3493 and documentation that you are implementing the plan on a continuous basis.

§63.3513 In what form and for how long must I keep my records?

(a) Your records must be kept in a form suitable and readily available for expeditious review, according to §63.10(b)(1). Where appropriate, the records may be maintained as electronic spreadsheets or as a database.

(b) As specified in §63.10(b)(1), you must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.

(c) You must keep each record on site for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to §63.10(b)(1). You may keep the records off site for the remaining 3 years.

Compliance Requirements for the Compliant Material Option

§63.3520 By what date must I conduct the initial compliance demonstration?

You must complete the initial compliance demonstration for the initial compliance period according to the requirements in §63.3521. The initial compliance period begins on the applicable compliance date specified in §63.3483 and ends on the last day of the 12th month following the compliance date. If the compliance date occurs on any day other than the first day of a month, then the initial compliance period extends through the end of that month plus the next 12 months. The initial compliance demonstration includes the calculations according to §63.3521 and supporting documentation showing that, during the initial compliance period, you used no coating with an organic HAP content that exceeded the applicable emission limit in §63.3490 and you used no thinners that contained organic HAP.

§63.3521 How do I demonstrate initial compliance with the emission limitations?

You may use the compliant material option for any individual coating operation, for any group of coating operations within a subcategory or coating type segment, or for all the coating operations within a subcategory or coating type segment. You must use either the emission rate without add-on controls option, the emission rate with add-on controls option, or the control efficiency/outlet concentration option for any coating operation in the affected source for which you do not use that option. To demonstrate initial compliance using the compliant material option, the coating operation or group of coating operations must use no coating with an organic HAP content that exceeds the applicable emission limit in §63.3490 and must use no thinner that contains organic HAP as determined according to this section. Any coating operation for which you use the compliant material option is not required to meet the operating limits or work practice standards required in §§63.3492 and 63.3493, respectively. You must conduct a separate initial compliance demonstration for each one and two-piece draw and iron can body coating, sheetcoating, three-piece can body assembly coating, and end coating affected source. You must meet all the requirements of this section for the coating operation or group of coating operations using this option. Use the procedures in this section on each coating and thinner in the condition it is in when it is received from its manufacturer or supplier and prior to any alteration (e.g., mixing or thinning). Do not include any coatings or thinners used on coating operations for which you use the emission rate without add-on controls option, the emission rate with add-on controls option, or the control efficiency/outlet concentration option. You do not need to redetermine the HAP content of coatings or thinners that have been reclaimed onsite and reused in the coating operation(s) for which you use the compliant material option, provided these materials in their condition as received were demonstrated to comply with the compliant material option.

(a) Determine the mass fraction of organic HAP for each material used. You must determine the mass fraction of organic HAP for each coating and thinner used during the compliance period by using one of the options in paragraphs (a)(1) through (5) of this section.

(1) Method 311 (appendix A to 40 CFR part 63). You may use Method 311 for determining the mass fraction of organic HAP. Use the procedures specified in paragraphs (a)(1)(i) and (ii) of this section when performing a Method 311 test.

(i) Count each organic HAP that is measured to be present at 0.1 percent by mass or more for Occupational Safety and Health Administration (OSHA)-defined carcinogens as specified in 29 CFR 1910.1200(d)(4) and at 1.0 percent by mass or more for other compounds. For example, if toluene (not an OSHA carcinogen) is measured to be 0.5 percent of the material by mass, you do not have to count it. Express the mass fraction of each organic HAP you count as a value truncated to four places after the decimal point (e.g., 0.3791).

(ii) Calculate the total mass fraction of organic HAP in the test material by adding up the individual organic HAP mass fractions and truncating the result to three places after the decimal point (e.g., 0.763).

(2) Method 24 (Appendix A to 40 CFR Part 60). For coatings, you may use Method 24 to determine the mass fraction of nonaqueous volatile matter and use that value as a substitute for mass fraction of organic HAP.

(3) Alternative method. You may use an alternative test method for determining the mass fraction of organic HAP once the Administrator has approved it. You must follow the procedure in §63.7(f) to submit an alternative test method for approval.

(4) Information from the supplier or manufacturer of the material. You may rely on information other than that generated by the test methods specified in paragraphs (a)(1) through (3) of this section, such as manufacturer's formulation data, if it represents each organic HAP that is present at 0.1 percent by mass or more for OSHA-defined carcinogens as specified in 29 CFR 1910.1200(d)(4) and at 1.0 percent by mass or more for other compounds. For example, if toluene (not an OSHA carcinogen) is 0.5 percent of the material by mass, you do not have to count it. If there is a disagreement between such information and results of a test conducted according to paragraphs (a)(1) through (3) of this section, then the test method results will take precedence unless, after consultation, a regulated source can demonstrate to the satisfaction of the enforcement agency that the formulation data are correct.

(5) Solvent blends. Solvent blends may be listed as single components for some materials in data provided by manufacturers or suppliers. Solvent blends may contain organic HAP which must be counted toward the total organic HAP mass fraction of the materials. When test data and manufacturer's data for solvent blends are not available, you may use the default values for the mass fraction of organic HAP in those solvent blends listed in Table 6 or 7 to this subpart. If you use the tables, you must use the values in Table 6 to this subpart for all solvent blends that match Table 6 entries, and you may only use Table 7 to this subpart if the solvent blends in the materials you use do not match any of the solvent blends in Table 6 and you only know whether the blend is aliphatic or aromatic. However, if the results of a Method 311 (40 CFR part 63, appendix A) test indicate higher values than those listed on Table 6 or 7 to this subpart, the Method 311 results will take precedence.

(b) Determine the volume fraction of coating solids for each coating. You must determine the volume fraction of coating solids (liters of coating solids per liter of coating) for each coating used during the compliance period by a test or by information provided by the supplier or the manufacturer of the material as specified in paragraphs (b)(1) and (2) of this section. If test results obtained according to paragraph (b)(1) of this section do not agree with the information obtained under paragraph (b)(2) of this section, the test results will take precedence.

(1) ASTM Method D2697-86 (Reapproved 1998) or D6093-97. You may use ASTM Method D2697-86 (Reapproved 1998), "Standard Test Method for Volume Nonvolatile Matter in Clear or Pigmented Coatings" (incorporated by reference, see §63.14), or D6093-97, "Standard Test Method for Percent Volume Nonvolatile Matter in Clear or Pigmented Coatings Using a Helium Gas Pycnometer" (incorporated by reference, see §63.14), to determine the volume fraction of coating solids for each coating. Divide the nonvolatile volume percent obtained with the methods by 100 to calculate volume fraction of coating solids. If these values cannot be determined

using these methods, the owner/operator may submit an alternative technique for determining the values for approval by the Administrator.

(2) Information from the supplier or manufacturer of the material. You may obtain the volume fraction of coating solids for each coating from the supplier or manufacturer.

(c) Determine the density of each coating. Determine the density of each coating used during the compliance period from test results using ASTM Method D1475-90 or information from the supplier or manufacturer of the material. If there is disagreement between ASTM Method D1475-90 test results and the supplier's or manufacturer's information, the test results will take precedence.

(d) Calculate the organic HAP content of each coating. Calculate the organic HAP content, kg organic HAP per liter coating solids, of each coating used during the compliance period, using Equation 1 of this section.

$$H_C = \frac{(D_C)(W_C)}{V_S} \quad \textbf{(Eq. 1)}$$

Where:

H_C = Organic HAP content of the coating, kg organic HAP per liter coating solids.

D_C = Density of coating, kg coating per liter coating, determined according to paragraph (c) of this section.

W_C = mass fraction of organic HAP in the coating, kg organic HAP per kg coating, determined according to paragraph (a) of this section.

V_S = Volume fraction of coating solids, liter coating solids per liter coating, determined according to paragraph (b) of this section.

(e) Compliance demonstration. The organic HAP content for each coating used during the initial compliance period, determined using Equation 1 of this section, must be less than or equal to the applicable emission limit in §63.3490 and each thinner used during the initial compliance period must contain no organic HAP, determined according to paragraph (a) of this section. You must keep all records required by §§63.3512 and 63.3513. As part of the Notification of Compliance Status required in §63.3510, you must identify the coating operation(s) for which you used the compliant material option and submit a statement that the coating operation(s) was (were) in compliance with the emission limitations during the initial compliance period because you used no coatings for which the organic HAP content exceeded the applicable emission limit in §63.3490, and you used no thinners that contained organic HAP, determined according to paragraph (a) of this section.

§63.3522 How do I demonstrate continuous compliance with the emission limitations?

(a) For each compliance period, to demonstrate continuous compliance, you must use no coating for which the organic HAP content, determined using Equation 1 of §63.3521, exceeds the applicable emission limit in §63.3490 and use no thinner that contains organic HAP, determined according to §63.3521(a). A compliance period consists of 12 months. Each month after the end of the initial compliance period described in §63.3520 is the end of a compliance period consisting of that month and the preceding 11 months.

(b) If you choose to comply with the emission limitations by using the compliant material option, the use of any coating or thinner that does not meet the criteria specified in paragraph (a) of this section is a deviation from the emission limitations that must be reported as specified in §§63.3510(b)(6) and 63.3511(a)(5).

(c) As part of each semiannual compliance report required by §63.3511, you must identify the coating operation(s) for which you used the compliant material option. If there were no deviations from the emission limitations in §63.3490, submit a statement that the coating operation(s) was (were) in compliance with the emission limitations during the reporting period because you used no coating for which the organic HAP content exceeded the applicable emission limit in §63.3490, and you used no thinner or cleaning material that contained organic HAP, determined according to §63.3521(a).

(d) You must maintain records as specified in §§63.3512 and 63.3513.

Compliance Requirements for the Emission Rate Without Add-On Controls Option

§63.3530 By what date must I conduct the initial compliance demonstration?

You must complete the initial compliance demonstration for the initial compliance period according to the requirements of §63.3531. The initial compliance period begins on the applicable compliance date specified in §63.3483 and ends on the last day of the 12th month following the compliance date. If the compliance date occurs on any day other than the first day of a month, then the initial compliance period extends through the end of that month plus the next 12 months. You must determine the mass of organic HAP emissions and volume of coating solids used each month and then calculate a 12-month organic HAP emission rate at the end of the initial 12-month compliance period. The initial compliance demonstration includes the calculations according to §63.3531 and supporting documentation showing that, during the initial compliance period, the organic HAP emission rate was equal to or less than the applicable emission limit in §63.3490.

§63.3531 How do I demonstrate initial compliance with the emission limitations?

You may use the emission rate without add-on controls option for any coating operation, for any group of coating operations within a subcategory or coating type segment, or for all of the coating operations within a subcategory or coating type segment. You must use either the compliant material option, the emission rate with add-on controls option,

or the control efficiency/outlet concentration option for any coating operation in the affected source for which you do not use this option. If you use the alternative overall emission limit for a subcategory according to paragraph (i) of this section to demonstrate compliance, however, you must include all coating operations in all coating type segments in the subcategory to determine compliance with the overall limit. To demonstrate initial compliance using the emission rate without add-on controls option, the coating operation or group of coating operations must meet the applicable emission limit in §63.3490, but is not required to meet the operating limits or work practice standards in §§63.3492 and 63.3493, respectively. You must conduct a separate initial compliance demonstration for each one and two-piece draw and iron can body coating, sheetcoating, three-piece can body assembly coating, and end coating affected source. You must meet all the requirements of this section to demonstrate initial compliance with the applicable emission limit in §63.3490 for the coating operation(s). When calculating the organic HAP emission rate according to this section, do not include any coatings or thinners used on coating operations for which you use the compliant material option, the emission rate with add-on controls option, or the control efficiency/outlet concentration option or coating operations in a different affected source in a different subcategory. Use the procedures in this section on each coating and thinner in the condition it is in when it is received from its manufacturer or supplier and prior to any alteration (e.g., mixing or thinning). You do not need to redetermine the mass of organic HAP in coatings or thinners that have been reclaimed onsite and reused in the coating operation(s) for which you use the emission rate without add-on controls option.

(a) Determine the mass fraction of organic HAP for each material. Determine the mass fraction of organic HAP for each coating and thinner used during each month according to the requirements in §63.3521(a).

(b) Determine the volume fraction of coating solids for each coating. Determine the volume fraction of coating solids for each coating used during each month according to the requirements in §63.3521(b).

(c) Determine the density of each material. Determine the density of each coating and thinner used during each month from test results using ASTM Method D1475-90, information from the supplier or manufacturer of the material, or reference sources providing density or specific gravity data for pure materials. If there is disagreement between ASTM Method D1475-90 test results and such other information sources, the test results will take precedence.

(d) Determine the volume of each material used. Determine the volume (liters) of each coating and thinner used during each month by measurement or usage records.

(e) Calculate the mass of organic HAP emissions. The mass of organic HAP emissions is the combined mass of organic HAP contained in all coatings and thinners used during each month minus the organic HAP in certain waste materials. Calculate it using Equation 1 of this section.

$$H_e = A + B - R_w \quad \textbf{(Eq. 1)}$$

Where:

H_e = Total mass of organic HAP emissions during the month, kg.

A = Total mass of organic HAP in the coatings used during the month, kg, as calculated in Equation 1A of this section.

B = Total mass of organic HAP in the thinners used during the month, kg, as calculated in Equation 1B of this section.

R_w = Total mass of organic HAP in waste materials sent or designated for shipment to a hazardous waste TSDF or other applicable waste management location for treatment or disposal during the month, kg, determined according to paragraph (e)(3) of this section. (You may assign a value of zero to R_w if you do not wish to use this allowance.)

(1) Calculate the mass of organic HAP in the coatings used during the month using Equation 1A of this section.

$$A = \sum_{i=1}^{m} \left(Vol_{C,i}\right)\left(D_{C,i}\right)\left(W_{C,i}\right) \quad \textbf{(Eq. 1A)}$$

Where:

A = Total mass of organic HAP in the coatings used during the month, kg.

$Vol_{C,i}$ = Total volume of coating, i, used during the month, liters.

$D_{C,i}$ = Density of coating, i, kg coating per liter coating.

$W_{C,i}$ = Mass fraction of organic HAP in coating, i, kg organic HAP per kg coating.

m = Number of different coatings used during the month.

(2) Calculate the mass of organic HAP in the thinners used during the month using Equation 1B of this section.

$$B = \sum_{j=1}^{n} \left(Vol_{t,j}\right)\left(D_{t,j}\right)\left(W_{t,j}\right) \quad \textbf{(Eq. 1B)}$$

Where:

B = Total mass of organic HAP in the thinners used during the month, kg.

$Vol_{t,j}$ = Total volume of thinner, j, used during the month, liters.

$D_{t,j}$ = Density of thinner, j, kg per liter.

$W_{t,j}$ = Mass fraction of organic HAP in thinner, j, kg organic HAP per kg thinner.

n = Number of different thinners used during the month.

(3) If you choose to account for the mass of organic HAP contained in waste materials sent or designated for shipment to a hazardous waste TSDF or other applicable waste management location in Equation 1 of this

section, then you must determine it according to paragraphs (e)(3)(i) through (iv) of this section.

(i) You may include in the determination only waste materials that are generated by coating operations for which you use Equation 1 of this section and that will be treated or disposed of by a facility regulated as a TSDF under 40 CFR part 262, 264, 265, or 266 or otherwise managed in accordance with applicable Federal and State waste management regulations. The TSDF or other applicable waste management location may be either offsite or onsite. You may not include organic HAP contained in wastewater.

(ii) You must determine either the amount of the waste materials sent to a TSDF, or other applicable waste management location, during the month, or the amount collected and stored during the month and designated for future transport to a TSDF or other applicable waste management location. Do not include in your determination any waste materials sent to a TSDF or other applicable waste management location during a month if you have already included them in the amount collected and stored during that month or a previous month.

(iii) Determine the total mass of organic HAP contained in the waste materials specified in paragraph (e)(3)(ii) of this section.

(iv) You must document the methodology you used to determine the amount of waste materials and the total mass of organic HAP they contain as required in §63.3512(h). To the extent that waste manifests include this information, they may be used as part of the documentation of the amount of waste materials and mass of organic HAP contained in them.

(f) Calculate the total volume of coating solids used. Determine the total volume of coating solids used which is the combined volume of coating solids for all the coatings used during each month using Equation 2 of this section.

$$V_{st} = \sum_{i=1}^{m} \left(Vol_{c,i}\right)\left(V_{s,i}\right) \qquad \textbf{(Eq. 2)}$$

Where:

V_{st} = Total volume of coating solids used during the month, liters.

$Vol_{c,i}$ = Total volume of coating, i, used during the month, liters.

$V_{s,i}$ = Volume fraction of coating solids for coating, i, liter solids per liter coating, determined according to §63.3521(b).

m = Number of coatings used during the month.

(g) Calculate the organic HAP emission rate. Calculate the organic HAP emission rate for the 12-month compliance period, kg organic HAP per liter coating solids used, using Equation 3 of this section.

$$H_{yr} = \frac{\sum_{y=1}^{12} H_e}{\sum_{y=1}^{12} V_{st}} \quad \textbf{(Eq. 3)}$$

Where:

H_{yr} = Organic HAP emission rate for the 12-month compliance period, kg organic HAP per liter coating solids.

H_e = Total mass of organic HAP emissions, kg, from all materials used during month, y, as calculated by Equation 1 of this section.

V_{st} = Total volume of coating solids, liters, used during month, y, as calculated by Equation 2 of this section.

y = Identifier for months.

(h) Compliance demonstration. The organic HAP emission rate for the initial 12-month compliance period, H_{yr}, must be less than or equal to the applicable emission limit in §63.3490. You must keep all records as required by §§63.3512 and 63.3513. As part of the Notification of Compliance Status required by §63.3510, you must identify the coating operation(s) for which you used the emission rate without add-on controls option and submit a statement that the coating operation(s) was (were) in compliance with the emission limitations during the initial compliance period because the organic HAP emission rate was less than or equal to the applicable emission limit in §63.3490, determined according to this section.

(i) Alternative calculation of overall subcategory emission limit (OSEL). Alternatively, if your affected source applies coatings in more than one coating type segment within a subcategory, you may calculate an overall HAP emission limit for the subcategory using Equation 4 of this section. If you use this approach, you must limit organic HAP emissions to the atmosphere to the OSEL specified by Equation 4 of this section during each 12-month compliance period.

$$OSEL = \frac{\sum_{i=1}^{n} L_i(V_i)}{\sum_{i=1}^{n} V_i} \quad \textbf{(Eq. 4)}$$

Where:

OSEL = Total allowable organic HAP in kg HAP/liter coating solids (pound (lb) HAP/gal solids) that can be emitted to the atmosphere from all coating type segments in the subcategory.

L_i = HAP emission limit for coating type segment i from Table 1 for a new or reconstructed source or Table 2 for an existing source, kg HAP/liter coating solids (lb HAP/gal solids).

V_i = Total volume of coating solids in liters (gal) for all coatings in coating type segment i used during the 12-month compliance period.

n = Number of coating type segments within one subcategory being used at the affected source.

You must use the OSEL determined by Equation 4 of this section throughout the 12-month compliance period and may not switch between compliance with individual coating type limits and an OSEL. You may not include coatings in different subcategories in determining your OSEL by this approach. You must keep all records as required by §§63.3512 and 63.3513. As part of the Notification of Compliance Status required by §63.3510, you must identify the subcategory for which you used a calculated OSEL and submit a statement that the coating operation(s) was (were) in compliance with the emission limitations during the initial compliance period because the organic HAP emission rate for the subcategory was less than or equal to the OSEL determined according to this section.

§63.3532 How do I demonstrate continuous compliance with the emission limitations?

(a) To demonstrate continuous compliance, the organic HAP emission rate for each compliance period, determined according to §63.3531(a) through (g), must be less than or equal to the applicable emission limit in §63.3490. Alternatively, if you calculate an OSEL for all coating type segments within a subcategory according to §63.3531(i), the organic HAP emission rate for the subcategory for each compliance period must be less than or equal to the calculated OSEL. You must use the calculated OSEL throughout each compliance period. A compliance period consists of 12 months. Each month after the end of the initial compliance period described in §63.3530 is the end of a compliance period consisting of that month and the preceding 11 months. You must perform the calculations in §63.3531(a) through (g) on a monthly basis using data from the previous 12 months of operation.

(b) If the organic HAP emission rate for any 12-month compliance period exceeded the applicable emission limit in §63.3490 or the OSEL calculated according to §63.3531(i), this is a deviation from the emission limitations for that compliance period and must be reported as specified in §§63.3510(c)(6) and 63.3511(a)(6).

(c) As part of each semiannual compliance report required by §63.3511, you must identify the coating operation(s) for which you used the emission rate without add-on controls option. If there were no deviations from the emission limitations, you must submit a statement that the coating operation(s) was (were) in compliance with the emission limitations during the reporting period because the organic HAP emission rate for each compliance period was less than or equal to the applicable emission limit in §63.3490 determined according to §63.3531(a) through (g), or using the OSEL calculated according to §63.3531(i).

(d) You must maintain records as specified in §§63.3512 and 63.3513.

**Compliance Requirements for the
Emission Rate With Add-On Controls Option**

§63.3540 By what date must I conduct performance tests and other initial compliance demonstrations?

(a) New and reconstructed affected sources. For a new or reconstructed affected source, you must meet the requirements of paragraphs (a)(1) through (4) of this section.

(1) All emission capture systems, add-on control devices, and CPMS must be installed and operating no later than the applicable compliance date specified in §63.3483. Except for solvent recovery systems for which you conduct liquid-liquid material balances according to §63.3541(i), you must conduct a performance test of each capture system and add-on control device according to §§63.3543, 63.3544, and 63.3545 and establish the operating limits required by §63.3492 no later than 180 days after the applicable compliance date specified in §63.3483. For a solvent recovery system for which you conduct liquid-liquid material balances according to §63.3541(i), you must initiate the first material balance no later than the applicable compliance date specified in §63.3483.

(2) You must develop and begin implementing the work practice plan required by §63.3493 no later than the compliance date specified in §63.3483.

(3) You must complete the initial compliance demonstration for the initial compliance period according to the requirements of §63.3541. The initial compliance period begins on the applicable compliance date specified in §63.3483 and ends on the last day of the 12th month following the compliance date. If the compliance date occurs on any day other than the first day of a month, then the initial compliance period extends through the end of that month plus the next 12 months. You must determine the mass of organic HAP emissions and volume of coating solids used each month and then calculate a 12-month organic HAP emission rate at the end of the initial 12-month compliance period. The initial compliance demonstration includes the results of emission capture system and add-on control device performance tests conducted according to §§63.3543, 63.3544, and 63.3545; results of liquid-liquid material balances conducted according to §63.3541(i); calculations according to §63.3541 and supporting documentation showing that, during the initial compliance period, the organic HAP emission rate was equal to or less than the emission limit in §63.3490(a); the operating limits established during the performance tests and the results of the continuous parameter monitoring required by §63.3547; and documentation of whether you developed and implemented the work practice plan required by §63.3493.

(4) You do not need to comply with the operating limits for the emission capture system and add-on control device required by §63.3492 until after you have completed the performance tests specified in paragraph (a)(1) of this section. Instead, you must maintain a log detailing the operation and maintenance of the emission capture system, add-on control device, and continuous parameter monitors during the period between the compliance date and the performance test. You must begin complying with the operating limits for your affected source on the date you complete the performance tests specified in paragraph (a)(1) of this section. The requirements in this paragraph (a)(4) do not apply to solvent recovery

systems for which you conduct liquid-liquid material balances according to the requirements in §63.3541(i).

(b) Existing affected sources. For an existing affected source, you must meet the requirements of paragraphs (b)(1) through (3) of this section.

(1) All emission capture systems, add-on control devices, and CPMS must be installed and operating no later than the applicable compliance date specified in §63.3483. Except for solvent recovery systems for which you conduct liquid-liquid material balances according to §63.3541(i), you must conduct a performance test of each capture system and add-on control device according to the procedures in §§63.3543, 63.3544, and 63.3545 and establish the operating limits required by §63.3492 no later than the compliance date specified in §63.3483. For a solvent recovery system for which you conduct liquid-liquid material balances according to §63.3541(i), you must initiate the first material balance no later than the compliance date specified in §63.3483.

(2) You must develop and begin implementing the work practice plan required by §63.3493 no later than the compliance date specified in §63.3483.

(3) You must complete the initial compliance demonstration for the initial compliance period according to the requirements of §63.3541. The initial compliance period begins on the applicable compliance date specified in §63.3483 and ends on the last day of the 12th month following the compliance date. If the compliance date occurs on any day other than the first day of a month, then the initial compliance period extends through the end of that month plus the next 12 months. You must determine the mass of organic HAP emissions and volume of coating solids used each month and then calculate a 12-month organic HAP emission rate at the end of the initial 12-month compliance period. The initial compliance demonstration includes the results of emission capture system and add-on control device performance tests conducted according to §§63.3543, 63.3544, and 63.3545; results of liquid-liquid material balances conducted according to §63.3541(i); calculations according to §63.3541 and supporting documentation showing that during the initial compliance period the organic HAP emission rate was equal to or less than the emission limit in §63.3490(b); the operating limits established during the performance tests and the results of the continuous parameter monitoring required by §63.3547; and documentation of whether you developed and implemented the work practice plan required by §63.3493.

§63.3541 How do I demonstrate initial compliance?

(a) You may use the emission rate with add-on controls option for any coating operation, for any group of coating operations within a subcategory or coating type segment, or for all of the coating operations within a subcategory or coating type segment. You may include both controlled and uncontrolled coating operations in a group for which you use this option. You must use either the compliant material option, the emission rate without add-on controls option, or the control efficiency/outlet concentration option for any coating operation in the affected source for which you do not use the emission rate with add-on controls option. To demonstrate initial compliance, the coating operation(s) for which you use the emission rate with add-on controls

option must meet the applicable emission limitations in §63.3490. You must conduct a separate initial compliance demonstration for each one and two-piece draw and iron can body coating, sheetcoating, three-piece can body assembly coating, and end coating affected source. You must meet all the requirements of this section to demonstrate initial compliance with the emission limitations. When calculating the organic HAP emission rate according to this section, do not include any coatings or thinners used on coating operations for which you use the compliant material option, the emission rate without add-on controls option, or the control efficiency/outlet concentration option. You do not need to redetermine the mass of organic HAP in coatings or thinners that have been reclaimed onsite and reused in the coating operation(s) for which you use the emission rate with add-on controls option.

(b) Compliance with operating limits. Except as provided in §63.3540(a)(4) and except for solvent recovery systems for which you conduct liquid-liquid material balances according to the requirements of §63.3541(i), you must establish and demonstrate continuous compliance during the initial compliance period with the operating limits required by §63.3492 using the procedures specified in §§63.3546 and 63.3547.

(c) Compliance with work practice requirements. You must develop, implement, and document your implementation of the work practice plan required by §63.3493 during the initial compliance period, as specified in §63.3512.

(d) Compliance with emission limits. You must follow the procedures in paragraphs (e) through (n) of this section to demonstrate compliance with the applicable emission limit in §63.3490.

(e) Determine the mass fraction of organic HAP, density, volume used, and volume fraction of coating solids. Follow the procedures specified in §63.3531(a) through (d) to determine the mass fraction of organic HAP, density, and volume of each coating and thinner used during each month and the volume fraction of coating solids for each coating used during each month.

(f) Calculate the total mass of organic HAP emissions before add-on controls. Using Equation 1 of §63.3531, calculate the total mass of organic HAP emissions before add-on controls from all coatings and thinners used during each month in the coating operation or group of coating operations for which you use the emission rate with add-on controls option.

(g) Calculate the organic HAP emission reduction for each controlled coating operation. Determine the mass of organic HAP emissions reduced for each controlled coating operation during each month. The emission reduction determination quantifies the total organic HAP emissions that pass through the emission capture system and are destroyed or removed by the add-on control device. Use the procedures in paragraph (h) of this section to calculate the mass of organic HAP emission reduction for each controlled coating operation using an emission capture system and add-on control device other than a solvent recovery system for which you conduct liquid-liquid material balances. For each controlled coating operation using a solvent recovery system for which you conduct a liquid-liquid material balance, use the procedures in paragraph (j) of this section to calculate the organic HAP emission reduction.

(h) Calculate the organic HAP emission reduction for each controlled coating operation not using liquid-liquid material balances. For each controlled coating operation using an emission capture system and add-on control device, other than a solvent recovery system for which you conduct liquid-liquid material balances, calculate the organic HAP emission reduction, using Equation 1 of this section. The calculation applies the emission capture system efficiency and add-on control device efficiency to the mass of organic HAP contained in the coatings, thinners, and cleaning materials that are used in the coating operation served by the emission capture system and add-on control device during each month. For any period of time a deviation specified in §63.3542(c) or (d) occurs in the controlled coating operation, including a deviation during a period of SSM, you must assume zero efficiency for the emission capture system and add-on control device, unless you have other data indicating the actual efficiency of the emission capture system and add-on control device, and the use of these data has been approved by the Administrator. Equation 1 of this section treats the materials used during such a deviation as if they were used on an uncontrolled coating operation for the time period of the deviation.

$$H_C = \left(A_C + B_C - H_{unc}\right)\left(\frac{CE}{100} \times \frac{DRE}{100}\right) \quad \textbf{(Eq. 1)}$$

Where:

H_C = Mass of organic HAP emission reduction for the controlled coating operation during the month, kg.

A_C = Total mass of organic HAP in the coatings used in the controlled coating operation during the month, kg, as calculated in Equation 1A of this section.

B_C = Total mass of organic HAP in the thinners used in the controlled coating operation during the month, kg, as calculated in Equation 1B of this section.

H_{unc} = Total mass of organic HAP in the coatings, thinners, and cleaning materials used during all deviations specified in §63.3542(c) and (d) that occurred during the month in the controlled coating operation, kg, as calculated in Equation 1D of this section.

CE = Capture efficiency of the emission capture system vented to the add-on control device, percent. Use the test methods and procedures specified in §§63.3543 and 63.3544 to measure and record capture efficiency.

DRE = Organic HAP destruction or removal efficiency of the add-on control device, percent. Use the test methods and procedures in §§63.3543 and 63.3545 to measure and record the organic HAP destruction or removal efficiency.

(1) Calculate the mass of organic HAP in the coatings used in the controlled coating operation, kg, using Equation 1A of this section.

$$A_C = \sum_{i=1}^{m} \left(Vol_{c,i}\right)\left(D_{c,i}\right)\left(W_{c,i}\right) \quad \textbf{(Eq. 1A)}$$

Where:
A_C = Total mass of organic HAP in the coatings used in the controlled coating operation during the month, kg.
$Vol_{c,i}$ = Total volume of coating, i, used during the month, liters.
$D_{c,i}$ = Density of coating, i, kg per liter.
$W_{c,i}$ = Mass fraction of organic HAP in coating, i, kg per kg.
m = Number of different coatings used.

(2) Calculate the mass of organic HAP in the thinners used in the controlled coating operation, kg, using Equation 1B of this section.

$$B_C = \sum_{j=1}^{n} \left(Vol_{t,j}\right)\left(D_{t,j}\right)\left(W_{t,j}\right) \quad \textbf{(Eq. 1B)}$$

Where:
B_c = Total mass of organic HAP in the thinners used in the controlled coating operation during the month, kg.
$Vol_{t,j}$ = Total volume of thinner, j, used during the month, liters.
$D_{t,j}$ = Density of thinner, j, kg per liter thinner.
$W_{t,j}$ = Mass fraction of organic HAP in thinner, j, kg organic HAP per kg thinner.
n = Number of different thinners used.

(3) Calculate the mass of organic HAP in the cleaning materials used in the controlled coating operation during the month, kg, using Equation 1C of this section.

$$C_C = \sum_{h=1}^{q} \left(Vol_h\right)\left(D_h\right)\left(W_h\right) \quad \textbf{(Eq. 1C)}$$

Where:
C_c = Total mass of organic HAP in the cleaning materials used in the controlled coating operation during the month, kg.
$Vol_{s,k}$ = Total volume of cleaning material, k, used during the month, liters.
$D_{s,k}$ = Density of cleaning material, k, kg per liter.
$W_{s,k}$ = Mass fraction of organic HAP in cleaning material, k, kg per kg.
p = Number of different cleaning materials used.

(4) Calculate the mass of organic HAP in the coatings, thinners, and cleaning materials used in the controlled coating operation during deviations specified in §63.3542(c) and (d), using Equation 1D of this section.

$$H_{unc} = \sum_{h=1}^{q} (Vol_h)(D_h)(W_h) \quad \textbf{(Eq. 1D)}$$

Where:

H_{unc} = Total mass of organic HAP in the coatings, thinners, and cleaning materials used during all deviations specified in §63.3542(c) and (d) that occurred during the month in the controlled coating operation, kg.

Vol_h = Total volume of coating, thinner, or cleaning material, h, used in the controlled coating operation during deviations, liters.

D_h = Density of coating, thinner, or cleaning material, h, kg per liter.

W_h = Mass fraction of organic HAP in coating, thinner, or cleaning material, h, kg organic HAP per kg coating.

q = Number of different coatings, thinners, or cleaning materials.

(i) Calculate the organic HAP emission reduction for each controlled coating operation using liquid-liquid material balances. For each controlled coating operation using a solvent recovery system for which you conduct liquid-liquid material balances, calculate the organic HAP emission reduction by applying the volatile organic matter collection and recovery efficiency to the mass of organic HAP contained in the coatings and thinners that are used in the coating operation controlled by the solvent recovery system during each month. Perform a liquid-liquid material balance for each month as specified in paragraphs (i)(1) through (6) of this section. Calculate the mass of organic HAP emission reduction by the solvent recovery system as specified in paragraph (i)(7) of this section.

(1) For each solvent recovery system, install, calibrate, maintain, and operate according to the manufacturer's specifications, a device that indicates the cumulative amount of volatile organic matter recovered by the solvent recovery system each month.

(2) For each solvent recovery system, determine the mass of volatile organic matter recovered for the month, kg, based on measurement with the device required in paragraph (i)(1) of this section.

(3) Determine the mass fraction of volatile organic matter for each coating and thinner used in the coating operation controlled by the solvent recovery system during the month, kg volatile organic matter per kg coating. You may determine the volatile organic matter mass fraction using Method 24 of 40 CFR part 60, appendix A, or an EPA approved alternative method, or you may use information provided by the manufacturer or supplier of the coating. In the event of any inconsistency between information provided by the manufacturer or supplier and the results of Method 24 of 40 CFR part 60, appendix A, or an approved alternative method, the test method results will take precedence unless, after consultation, a regulated source can demonstrate

to the satisfaction of the enforcement agency that the formulation data are correct.

(4) Determine the density of each coating and thinner used in the coating operation controlled by the solvent recovery system during the month, kg per liter, according to §63.3531(c).

(5) Measure the volume of each coating, thinner, and cleaning material used in the coating operation controlled by the solvent recovery system during the month, liters.

(6) Each month, calculate the solvent recovery system's volatile organic matter collection and recovery efficiency, using Equation 2 of this section.

$$R_V = 100 \frac{M_{VR}}{\sum_{i=1}^{m} \left(Vol_i\right)\left(D_i\right)\left(WV_{c,i}\right) + \sum_{j=1}^{n} \left(Vol_j\right)\left(D_j\right)\left(WV_{t,j}\right)} \quad \textbf{(Eq. 2)}$$

Where:

R_V = Volatile organic matter collection and recovery efficiency of the solvent recovery system during the month, percent.

M_{VR} = Mass of volatile organic matter recovered by the solvent recovery system during the month, kg.

Vol_i = Volume of coating, i, used in the coating operation controlled by the solvent recovery system during the month, liters.

D_i = Density of coating, i, kg per liter.

$WV_{c,i}$ = Mass fraction of volatile organic matter for coating, i, kg volatile organic matter per kg coating.

Vol_j = Volume of thinner, j, used in the coating operation controlled by the solvent recovery system during the month, liters.

D_j = Density of thinner, j, kg per liter.

$WV_{t,j}$ = Mass fraction of volatile organic matter for thinner, j, kg volatile organic matter per kg thinner.

m = Number of different coatings used in the coating operation controlled by the solvent recovery system during the month.

n = Number of different thinners used in the coating operation controlled by the solvent recovery system during the month.

(7) Calculate the mass of organic HAP emission reduction for the coating operation controlled by the solvent recovery system during the month using Equation 3 of this section.

$$H_{CSR} = \left(A_{CSR} + B_{CSR}\right)\left(\frac{R_V}{100}\right) \quad \textbf{(Eq. 3)}$$

Where:

H_{CSR} = Mass of organic HAP emission reduction for the coating operation controlled by the solvent recovery system using a liquid-liquid material balance during the month, kg.

A_{CSR} = Total mass of organic HAP in the coatings used in the coating operation controlled by the solvent recovery system, kg, calculated using Equation 3A of this section.

B_{CSR} = Total mass of organic HAP in the thinners used in the coating operation controlled by the solvent recovery system, kg, calculated using Equation 3B of this section.

R_V = Volatile organic matter collection and recovery efficiency of the solvent recovery system, percent, from Equation 2 of this section.

(i) Calculate the mass of organic HAP in the coatings used in the coating operation controlled by the solvent recovery system, kg, using Equation 3A of this section.

$$A_{CSR} = \sum_{i=1}^{m} \left(Vol_{C,i}\right)\left(D_{C,i}\right)\left(W_{C,i}\right) \qquad \textbf{(Eq. 3A)}$$

Where:

A_{CSR} = Total mass of organic HAP in the coatings used in the coating operation controlled by the solvent recovery system during the month, kg.

$Vol_{c,i}$ = Total volume of coating, i, used during the month in the coating operation controlled by the solvent recovery system, liters.

$D_{c,i}$ = Density of coating, i, kg per liter.

$W_{c,i}$ = Mass fraction of organic HAP in coating, i, kg per kg.

m = Number of different coatings used.

(ii) Calculate the mass of organic HAP in the thinners used in the coating operation controlled by the solvent recovery system using Equation 3B of this section.

$$B_{CSR} = \sum_{j=1}^{n} \left(Vol_{t,j}\right)\left(D_{t,j}\right)\left(W_{t,j}\right) \qquad \textbf{(Eq. 3B)}$$

Where:

B_{CSR} = Total mass of organic HAP in the thinners used in the coating operation controlled by the solvent recovery system during the month, kg.

$Vol_{t,j}$ = Total volume of thinner, j, used during the month in the coating operation controlled by the solvent recovery system, liters.

$D_{t,j}$ = Density of thinner, j, kg per liter.

$W_{t,j}$ = Mass fraction of organic HAP in thinner, j, kg per kg.

n = Number of different thinners used.

(j) Calculate the total volume of coating solids used. Determine the total volume of coating solids used, which is the combined volume of coating solids for all the coatings used during each month in the coating operation or group of coating operations for which you use the emission rate with add-on controls option, using Equation 2 of §63.3531.

(k) Calculate the mass of organic HAP emissions for each month. Determine the mass of organic HAP emissions during each month using Equation 4 of this section.

$$H_{HAP} = H_e - \sum_{i=1}^{q} \left(H_{C,i}\right) - \sum_{j=1}^{r} \left(H_{CSR,j}\right) \quad \textbf{(Eq. 4)}$$

Where:

H_{HAP} = Total mass of organic HAP emissions for the month, kg.

H_e = Total mass of organic HAP emissions before add-on controls from all the coatings and thinners used during the month, kg, determined according to paragraph (f) of this section.

$H_{C,i}$ = Total mass of organic HAP emission reduction for controlled coating operation, i, not using a liquid-liquid material balance, during the month, kg, from Equation 1 of this section.

$H_{CSR,j}$ = Total mass of organic HAP emission reduction for coating operation, j, controlled by a solvent recovery system using a liquid-liquid material balance, during the month, kg, from Equation 3 of this section.

q = Number of controlled coating operations not using a liquid-liquid material balance.

r = Number of coating operations controlled by a solvent recovery system using a liquid-liquid material balance.

(l) Calculate the organic HAP emission rate for the 12-month compliance period. Determine the organic HAP emission rate for the 12-month compliance period, kg organic HAP per liter coating solids used, using Equation 5 of this section.

$$H_{annual} = \frac{\sum_{y=1}^{12} H_{HAP,y}}{\sum_{y=1}^{12} V_{st,y}} \quad \textbf{(Eq. 5)}$$

Where:

H_{annual} = Organic HAP emission rate for the 12-month compliance period, kg organic HAP per liter coating solids.

$H_{HAP,y}$ = Organic HAP emission rate for month, y, determined according to Equation 4 of this section.

$V_{st,y}$ = Total volume of coating solids used during month, y, liters, from Equation 2 of §63.3531.
y = Identifier for months.

(m) Compliance demonstration. To demonstrate initial compliance with the emission limit, the organic HAP emission rate, calculated using Equation 5 of this section, must be less than or equal to the applicable emission limit in §63.3490. You must keep all records as required by §§63.3512 and 63.3513. As part of the Notification of Compliance Status required by §63.3510, you must identify the coating operation(s) for which you used the emission rate with add-on controls option and submit a statement that the coating operation(s) was in compliance with the emission limitations during the initial compliance period because the organic HAP emission rate was less than or equal to the applicable emission limit in §63.3490, and you achieved the operating limits required by §63.3492 and the work practice standards required by §63.3493.

(n) Alternative calculation of overall subcategory emission limit. Alternatively, if your affected source applies coatings in more than one coating type segment within a subcategory, you may calculate an overall HAP emission limit for the subcategory using Equation 4 of §63.3531. If you use this approach, you must limit organic HAP emissions to the atmosphere to the OSEL specified by Equation 4 of §63.3531 during each 12-month compliance period. You must use the OSEL determined by Equation 4 of §63.3531 throughout the 12-month compliance period and may not switch between compliance with individual coating type limits and an OSEL. If you follow this approach, you may not include coatings in different subcategories in determining your OSEL. You must keep all records as required by §§63.3512 and 63.3513. As part of the Notification of Compliance Status required by §63.3510, you must identify the subcategory for which you used a calculated OSEL and submit a statement that the coating operation(s) was in compliance with the emission limitations during the initial compliance period because the organic HAP emission rate for the subcategory was less than or equal to the OSEL determined according to this section.

§63.3542 How do I demonstrate continuous compliance with the emission limitations?

(a) To demonstrate continuous compliance with the applicable emission limit in §63.3490, the organic HAP emission rate for each compliance period, determined according to the procedures in §63.3541, must be equal to or less than the applicable emission limit in §63.3490. Alternatively, if you calculate an OSEL for all coating type segments within a subcategory according to §63.3531(i), the organic HAP emission rate for the subcategory for each compliance period must be less than or equal to the calculated OSEL. You must use the calculated OSEL throughout each compliance period. A compliance period consists of 12 months. Each month after the end of the initial compliance period described in §63.3540 is the end of a compliance period consisting of that month and the preceding 11 months. You must perform the calculations in §63.3541 on a monthly basis using data from the previous 12 months of operation.

(b) If the organic HAP emission rate for any 12-month compliance period exceeded the applicable emission limit in §63.3490, that is a deviation from the emission limitation for that compliance period and must be reported as specified in §§63.3510(b)(6) and 63.3511(a)(7).

(c) You must demonstrate continuous compliance with each operating limit required by §63.3492 that applies to you as specified in Table 4 to this subpart.

(1) If an operating parameter is out of the allowed range specified in Table 4 to this subpart, this is a deviation from the operating limit that must be reported as specified in §§63.3510(b)(6) and 63.3511(a)(7).

(2) If an operating parameter deviates from the operating limit specified in Table 4 to this subpart, then you must assume that the emission capture system and add-on control device were achieving zero efficiency during the time period of the deviation, unless you have other data indicating the actual efficiency of the emission capture system and add-on control device, and the use of these data has been approved by the Administrator. For the purposes of completing the compliance calculations specified in §63.3541(h), you must treat the materials used during a deviation on a controlled coating operation as if they were used on an uncontrolled coating operation for the time period of the deviation as indicated in Equation 1 of §63.3541.

(d) You must meet the requirements for bypass lines in §63.3547(b) for controlled coating operations for which you do not conduct liquid-liquid material balances. If any bypass line is opened and emissions are diverted to the atmosphere when the coating operation is running, this is a deviation that must be reported as specified in §§63.3510(b)(6) and 63.3511(a)(7). For the purposes of completing the compliance calculations specified in §63.3541(h), you must treat the materials used during a deviation on a controlled coating operation as if they were used on an uncontrolled coating operation for the time period of the deviation as indicated in Equation 1 of §63.3541.

(e) You must demonstrate continuous compliance with the work practice standards in §63.3493. If you did not develop a work practice plan or you did not implement the plan or you did not keep the records required by §63.3512(j)(8), that is a deviation from the work practice standards that must be reported as specified in §§63.3510(b)(6) and 63.3511(a)(7).

(f) As part of each semiannual compliance report required in §63.3511, you must identify the coating operation(s) for which you used the emission rate with add-on controls option. If there were no deviations from the emission limitations, submit a statement that you were in compliance with the emission limitations during the reporting period because the organic HAP emission rate for each compliance period was less than or equal to the applicable emission limit in §63.3490, and you achieved the operating limits required by §63.3492 and the work practice standards required by §63.3493 during each compliance period.

(g) During periods of startup, shutdown, or malfunction of the emission capture system, add-on control device, or coating operation that may affect emission capture or control device efficiency, you must operate in accordance with the SSMP required by §63.3500(c).

(h) Consistent with §§63.6(e) and 63.7(e)(1), deviations that occur during a period of startup, shutdown, or malfunction of the emission capture system, add-on control device, or coating operation that may affect emission capture or control device efficiency are not violations if you demonstrate to the Administrator's satisfaction that you were operating in accordance with the SSMP. The Administrator will determine whether deviations that occur during a period you identify as a startup, shutdown, or malfunction are violations according to the provisions in §63.6(e).

(i) You must maintain records as specified in §§63.3512 and 63.3513.

§63.3543 What are the general requirements for performance tests?
(a) You must conduct each performance test required by §63.3540 according to the requirements in §63.7(e)(1) and under the conditions in this section unless you obtain a waiver of the performance test according to the provisions in §63.7(h).

(1) Representative coating operation operating conditions. You must conduct the performance test under representative operating conditions for the coating operation. Operations during periods of startup, shutdown, or malfunction and during periods of nonoperation do not constitute representative conditions. You must record the process information that is necessary to document operating conditions during the test and explain why the conditions represent normal operation.

(2) Representative emission capture system and add-on control device operating conditions. You must conduct the performance test when the emission capture system and add-on control device are operating at a representative flow rate and the add-on control device is operating at a representative inlet concentration. You must record information that is necessary to document emission capture system and add-on control device operating conditions during the test and explain why the conditions represent normal operation.

(b) You must conduct each performance test of an emission capture system according to the requirements in §63.3544. You must conduct each performance test of an add-on control device according to the requirements in §63.3545.

§63.3544 How do I determine the emission capture system efficiency?
You must use the procedures and test methods in this section to determine capture efficiency as part of the performance test required by §63.3540.
(a) Assuming 100 percent capture efficiency. You may assume the capture system efficiency is 100 percent if both of the conditions in paragraphs (a)(1) and (2) of this section are met:

(1) The capture system meets the criteria in Method 204 of appendix M to 40 CFR part 51 for a PTE and directs all the exhaust gases from the enclosure to an add-on control device.

(2) All coatings and thinners used in the coating operation are applied within the capture system, and coating solvent flash-off, curing, and drying occurs within the capture system. For example, the criterion is

not met if parts enter the open shop environment when being moved between a spray booth and a curing oven.

(b) Measuring capture efficiency. If the capture system does not meet both of the criteria in paragraphs (a)(1) and (2) of this section, then you must use one of the three protocols described in paragraphs (c), (d), and (e) of this section to measure capture efficiency. The capture efficiency measurements use TVH capture efficiency as a surrogate for organic HAP capture efficiency. For the protocols in paragraphs (c) and (d) of this section, the capture efficiency measurement must consist of three test runs. Each test run must be at least 3 hours duration or the length of a production run, whichever is longer, up to 8 hours. For the purposes of this test, a production run means the time required for a single part to go from the beginning to the end of production, which includes surface preparation activities and drying or curing time.

(c) Liquid-to-uncaptured-gas protocol using a temporary total enclosure or building enclosure. The liquid-to-uncaptured-gas protocol compares the mass of liquid TVH in materials used in the coating operation to the mass of TVH emissions not captured by the emission capture system. Use a TTE or a building enclosure and the procedures in paragraphs (c)(1) through (6) of this section to measure emission capture system efficiency using the liquid-to-uncaptured-gas protocol.

(1) Either use a building enclosure or construct an enclosure around the coating operation where coatings and thinners are applied and all areas where emissions from these applied coatings and materials subsequently occur, such as flash-off, curing, and drying areas. The areas of the coating operation where capture devices collect emissions for routing to an add-on control device, such as the entrance and exit areas of an oven or spray booth, must also be inside the enclosure. The enclosure must meet the applicable definition of a TTE or building enclosure in Method 204 of appendix M to 40 CFR part 51.

(2) Use Method 204A or 204F of appendix M to 40 CFR part 51 to determine the mass fraction of TVH liquid input from each coating and thinner used in the coating operation during each capture efficiency test run. To make the determination, substitute TVH for each occurrence of the term volatile organic compounds (VOC) in the methods.

(3) Use Equation 1 of this section to calculate the total mass of TVH liquid input from all the coatings and thinners used in the coating operation during each capture efficiency test run.

$$TVH_{used} = \sum_{i=1}^{n} (TVH_i)(Vol_i)(D_i) \qquad \textbf{(Eq. 1)}$$

Where:

TVH_{used} = Total mass of liquid TVH in materials used in the coating operation during the capture efficiency test run, kg.

TVH_i = Mass fraction of TVH in coating or thinner, i, that is used in the coating operation during the capture efficiency test run, kg TVH per kg material

Vol_i = Total volume of coating or thinner, i, used in the coating operation during the capture efficiency test run, liters.
D_i = Density of coating or thinner, i, kg material per liter material.
n = Number of different coatings and thinners used in the coating operation during the capture efficiency test run.

(4) Use Method 204D or 204E of appendix M to 40 CFR part 51 to measure the total mass, kg, of TVH emissions that are not captured by the emission capture system; they are measured as they exit the TTE or building enclosure during each capture efficiency test run. To make the measurement, substitute TVH for each occurrence of the term VOC in the methods.

(i) Use Method 204D of appendix M to 40 CFR part 51 if the enclosure is a TTE.

(ii) Use Method 204E of appendix M to 40 CFR part 51 if the enclosure is a building enclosure. During the capture efficiency measurement, all organic compound emitting operations inside the building enclosure other than the coating operation for which capture efficiency is being determined must be shut down but all fans and blowers must be operating normally.

(5) For each capture efficiency test run, determine the percent capture efficiency of the emission capture system using Equation 2 of this section.

$$CE = \frac{\left(TVH_{used} - TVH_{uncaptured}\right)}{TVH_{used}} \times 100 \qquad \textbf{(Eq. 2)}$$

Where:
CE = Capture efficiency of the emission capture system vented to the add-on control device, percent.
TVH_{used} = Total mass of liquid TVH used in the coating operation during the capture efficiency test run, kg.
$TVH_{uncaptured}$ = Total mass of TVH that is not captured by the emission capture system and that exits from the TTE or building enclosure during the capture efficiency test run, kg, determined according to paragraph (c)(4) of this section.

(6) Determine the capture efficiency of the emission capture system as the average of the capture efficiencies measured in the three test runs.

(d) Gas-to-gas protocol using a temporary total enclosure or a building enclosure. The gas-to-gas protocol compares the mass of TVH emissions captured by the emission capture system to the mass of TVH emissions not captured. Use a TTE or a building enclosure and the procedures in

paragraphs (d)(1) through (5) of this section to measure emission capture system efficiency using the gas-to-gas protocol.

(1) Either use a building enclosure or construct an enclosure around the coating operation where coatings and thinners are applied and all areas where emissions from these applied coatings and materials subsequently occur, such as flash-off, curing, and drying areas. The areas of the coating operation where capture devices collect emissions generated by the coating operation for routing to an add-on control device, such as the entrance and exit areas of an oven or a spray booth, must also be inside the enclosure. The enclosure must meet the applicable definition of a TTE or building enclosure in Method 204 of appendix M to 40 CFR part 51.

(2) Use Method 204B or 204C of appendix M to 40 CFR part 51 to measure the total mass, kg, of TVH emissions captured by the emission capture system during each capture efficiency test run as measured at the inlet to the add-on control device. To make the measurement, substitute TVH for each occurrence of the term VOC in the methods.

(i) The sampling points for Method 204B or 204C of appendix M to 40 CFR part 51 measurement must be upstream from the add-on control device and must represent total emissions routed from the capture system and entering the add-on control device.

(ii) If multiple emission streams from the capture system enter the add-on control device without a single common duct, then the emissions entering the add-on control device must be simultaneously measured in each duct, and the total emissions entering the add-on control device must be determined.

(3) Use Method 204D or 204E of appendix M to 40 CFR part 51 to measure the total mass, kg, of TVH emissions that are not captured by the emission capture system; they are measured as they exit the TTE or building enclosure during each capture efficiency test run. To make the measurement, substitute TVH for each occurrence of the term VOC in the methods.

(i) Use Method 204D of appendix M to 40 CFR part 51 if the enclosure is a TTE.

(ii) Use Method 204E of appendix M to 40 CFR part 51 if the enclosure is a building enclosure. During the capture efficiency measurement, all organic compound emitting operations inside the building enclosure, other than the coating operation for which capture efficiency is being determined, must be shut down but all fans and blowers must be operating normally.

(4) For each capture efficiency test run, determine the percent capture efficiency of the emission capture system using Equation 3 of this section.

$$CE = \frac{TVH_{captured}}{\left(TVH_{captured} + TVH_{uncaptures}\right)} \times 100 \qquad \textbf{(Eq. 3)}$$

Where:

CE	=	Capture efficiency of the emission capture system vented to the add-on control device, percent.
$TVH_{captured}$	=	Total mass of TVH captured by the emission capture system as measured at the inlet to the add-on control device during the emission capture efficiency test run, kg, determined according to paragraph (d)(2) of this section.
$TVH_{uncaptured}$	=	Total mass of TVH that is not captured by the emission capture system and that exits from the TTE or building enclosure during the capture efficiency test run, kg, determined according to paragraph (d)(3) of this section.

(5) Determine the capture efficiency of the emission capture system as the average of the capture efficiencies measured in the three test runs.

(e) Alternative capture efficiency protocol. As an alternative to the procedures specified in paragraphs (c) and (d) of this section, you may determine capture efficiency using any other capture efficiency protocol and test methods that satisfy the criteria of either the DQO or LCL approach as described in appendix A to subpart KK of this part.

§63.3545 How do I determine the add-on control device emission destruction or removal efficiency?

You must use the procedures and test methods in this section to determine the add-on control device emission destruction or removal efficiency as part of the performance test required by §63.3540. You must conduct three test runs as specified in §63.7(e)(3) and each test run must last at least 1 hour.

(a) For all types of add-on control devices, use the test methods specified in paragraphs (a)(1) through (5) of this section.

(1) Use Method 1 or 1A of appendix A to 40 CFR part 60, as appropriate, to select sampling sites and velocity traverse points.

(2) Use Method 2, 2A, 2C, 2D, 2F, or 2G of appendix A to 40 CFR part 60, as appropriate, to measure gas volumetric flow rate.

(3) Use Method 3, 3A, or 3B of appendix A to 40 CFR part 60, as appropriate, for gas analysis to determine dry molecular weight. You may also use as an alternative to Method 3B the manual method for measuring the oxygen, carbon dioxide, and carbon monoxide content of exhaust gas in ANSI/ASME PTC 19.10-1981, “Flue and Exhaust Gas Analyses [Part 10, Instruments and Apparatus]” (incorporated by reference, see §63.14).

(4) Use Method 4 of appendix A to 40 CFR part 60 to determine stack gas moisture.

(5) Methods for determining gas volumetric flow rate, dry molecular weight, and stack gas moisture must be performed, as applicable, during each test run.

(b) Measure total gaseous organic mass emissions as carbon at the inlet and outlet of the add-on control device simultaneously using either Method 25 or 25A of appendix A to 40 CFR part 60 as specified in paragraphs (b)(1) through (5) of this section. You must use the same method for both the inlet and outlet measurements.

(1) Use Method 25 of appendix A to 40 CFR part 60 if the add-on control device is an oxidizer and you expect the total gaseous organic concentration as carbon to be more than 50 ppm at the control device outlet.

(2) Use Method 25A of appendix A to 40 CFR part 60 if the add-on control device is an oxidizer and you expect the total gaseous organic concentration as carbon to be 50 ppm or less at the control device outlet.

(3) Use Method 25A of appendix A to 40 CFR part 60 if the add-control device is not an oxidizer.

(4) You may use Method 18 of appendix A to 40 CFR part 60 to subtract methane emissions from measured total gaseous organic mass emissions as carbon.

(5) Alternatively, any other test method or data that have been validated according to the applicable procedures in Method 301 of 40 CFR part 63, appendix A, and approved by the Administrator, may be used.

(c) If two or more add-on control devices are used for the same emission stream, then you must measure emissions at the outlet of each device. For example, if one add-on control device is a concentrator with an outlet for the high-volume dilute stream that has been treated by the concentrator, and a second add-on control device is an oxidizer with an outlet for the low-volume concentrated stream that is treated with the oxidizer, you must measure emissions at the outlet of the oxidizer and the high-volume dilute stream outlet of the concentrator.

(d) For each test run, determine the total gaseous organic emissions mass flow rates for the inlet and the outlet of the add-on control device using Equation 1 of this section. If there is more than one inlet or outlet to the add-on control device, you must calculate the total gaseous organic mass flow rate using Equation 1 of this section for each inlet and each outlet and then total all of the inlet emissions and total all of the outlet emissions.

$$M_f = Q_{sd} C_C (12)(0.0416)\left(10^{-6}\right) \qquad \textbf{(Eq. 1)}$$

Where:

M_f = Total gaseous organic emissions mass flow rate, kg per hour (kg/h).

C_C = Concentration of organic compounds as carbon in the vent gas, as determined by Method 25 or Method 25A, ppmvd.

Q_{sd} = Volumetric flow rate of gases entering or exiting the add-on control device, as determined by Method 2, 2A, 2C, 2D, 2F, or 2G, dry standard cubic meters/hour (dscm/h).

0.0416 = Conversion factor for molar volume, kg-moles per cubic meter (mol/m^3) (@ 293 Kelvin (K) and 760 millimeters of mercury (mmHg)).

Note: If M_f is calculated in English units (lb/h), the conversion factor for molar volume is 0.00256 lb-moles per cubic foot (mol/ft^3).

(e) For each test run, determine the add-on control device organic emissions destruction or removal efficiency, using Equation 2 of this section.

$$DRE = 100 \times \frac{M_{fi} - M_{fo}}{M_{fi}} \quad \textbf{(Eq. 2)}$$

Where:

DRE = Organic emissions destruction or removal efficiency of the add-on control device, percent.

M_{fi} = Total gaseous organic emissions mass flow rate at the inlet(s) to the add-on control device, using Equation 1 of this section, kg/h.

M_{fo} = Total gaseous organic emissions mass flow rate at the outlet(s) of the add-on control device, using Equation 1 of this section, kg/h.

(f) Determine the emission destruction or removal efficiency of the add-on control device as the average of the efficiencies determined in the three test runs and calculated in Equation 2 of this section.

§63.3546 How do I establish the emission capture system and add-on control device operating limits during the performance test?

During the performance test required by §63.3540 and described in §§63.3543, 63.3544, and 63.3545, you must establish the operating limits required by §63.3492 unless you have received approval for alternative monitoring and operating limits under §63.8(f) as specified in §63.3492.

(a) Thermal oxidizers. If your add-on control device is a thermal oxidizer, establish the operating limits according to paragraphs (a)(1) and (2) of this section.

(1) During the performance test, you must monitor and record the combustion temperature at least once every 15 minutes during each of the three test runs. You must monitor the temperature in the firebox of the thermal oxidizer or immediately downstream of the firebox before any substantial heat exchange occurs.

(2) Use the data collected during the performance test to calculate and record the average combustion temperature maintained during the performance test. That average combustion temperature is the minimum operating limit for your thermal oxidizer.

(b) Catalytic oxidizers. If your add-on control device is a catalytic oxidizer, establish the operating limits according to either paragraphs (b)(1) and (2) or paragraphs (b)(3) and (4) of this section.

(1) During the performance test, you must monitor and record the temperature at the inlet to the catalyst bed and the temperature difference across the catalyst bed at least once every 15 minutes during each of the three test runs.

(2) Use the data collected during the performance test to calculate and record the average temperature at the inlet to the catalyst bed and the average temperature difference across the catalyst bed maintained during the performance test. The average temperature difference is the minimum operating limit for your catalytic oxidizer.

(3) As an alternative to monitoring the temperature difference across the catalyst bed, you may monitor the temperature at the inlet to the catalyst bed and implement a site-specific inspection and maintenance plan for your catalytic oxidizer as specified in paragraph (b)(4) of this section. During the performance test, you must monitor and record the temperature at the inlet to the catalyst bed at least once every 15 minutes during each of the three test runs. Use the data collected during the performance test to calculate and record the average temperature at the inlet to the catalyst bed during the performance test. That is the minimum operating limit for your catalytic oxidizer.

(4) You must develop and implement an inspection and maintenance plan for your catalytic oxidizer(s) for which you elect to monitor according to paragraph (b)(3) of this section. The plan must address, at a minimum, the elements specified in paragraphs (b)(4)(i) through (iii) of this section.

(i) Annual sampling and analysis of the catalyst activity (i.e, conversion efficiency) following the manufacturer’s or catalyst supplier’s recommended procedures.

(ii) Monthly inspection of the oxidizer system, including the burner assembly and fuel supply lines for problems and, as necessary, adjust the equipment to assure proper air-to-fuel mixtures.

(iii) Annual internal and monthly external visual inspection of the catalyst bed to check for channeling, abrasion, and settling. If problems are found, you must take corrective action consistent with the manufacturer’s recommendations and conduct a new performance test to determine destruction efficiency according to §63.3545.

(c) Regenerative oxidizers. If your add-on control device is a regenerative oxidizer, establish operating limits according to paragraphs (c)(1) and (2) of this section.

(1) You must establish all applicable operating limits according to paragraphs (a) and (b) of this section.

(2) You must submit a valve inspection plan that documents the steps taken to minimize the amount of leakage during the regenerative process. This plan can include, but is not limited to, routine inspection of key parameters of the valve operating system (e.g., solenoid valve operation,

air pressure, hydraulic pressure); visual inspection of the valves during internal inspections; and/or actual testing of the emission stream for leakage.

(d) Carbon adsorbers. If your add-on control device is a carbon adsorber, establish the operating limits according to paragraphs (d)(1) and (2) of this section.

(1) You must monitor and record the total regeneration desorbing gas (e.g., steam or nitrogen) mass flow for each regeneration cycle, and the carbon bed temperature after each carbon bed regeneration and cooling cycle for the regeneration cycle either immediately preceding or immediately following the performance test.

(2) The operating limits for your carbon adsorber are the minimum total desorbing gas mass flow recorded during the regeneration cycle, and the maximum carbon bed temperature recorded after the cooling cycle.

(e) Condensers. If your add-on control device is a condenser, establish the operating limits according to paragraphs (e)(1) and (2) of this section.

(1) During the performance test, monitor and record the condenser outlet (product side) gas temperature at least once every 15 minutes during each of the three test runs.

(2) Use the data collected during the performance test to calculate and record the average condenser outlet (product side) gas temperature maintained during the performance test. This average condenser outlet gas temperature is the maximum operating limit for your condenser.

(f) Concentrators. If your add-on control device includes a concentrator, you must establish operating limits for the concentrator according to paragraphs (f)(1) through (7) of this section.

(1) During the performance test, monitor and record the inlet temperature to the desorption/reactivation zone of the concentrator at least once every 15 minutes during each of the three runs of the performance test.

(2) Use the data collected during the performance test to calculate and record the average temperature. This is the minimum operating limit for the desorption/reactivation zone inlet temperature.

(3) During the performance test, monitor and record an indicator(s) of performance for the desorption/reactivation fan operation at least once every 15 minutes during each of the three runs of the performance test. The indicator can be speed in revolutions per minute (rpm), power in amps, static pressure, or flow rate.

(4) Establish a suitable range for the parameter(s) selected based on the system design specifications, historical data, and/or data obtained concurrent with an emissions performance test. This is the operation limit range for the desorption/reactivation fan operation.

(5) During the performance test, monitor the rotational speed of the concentrator at least once every 15 minutes during each of the three runs of the performance test.

(6) Use the data collected during the performance test to calculate and record the average rotational speed. This is the minimum operating limit for the rotational speed of the concentrator. However, the indicator range for the rotational speed may be changed if an engineering evaluation is conducted and a determination made that the change in speed will not affect compliance with the emission limit.

(7) Develop and implement an inspection and maintenance plan for the concentrator(s) that you elect to monitor according to paragraph (f) of this section. The plan must include, at a minimum, annual sampling and analysis of the absorbent material (i.e., adsorbent activity) following the manufacturer's recommended procedures.

(g) Emission capture systems. For each capture device that is not part of a PTE that meets the criteria of §63.3544(a), establish an operating limit for either the gas volumetric flow rate or duct static pressure, as specified in paragraphs (g)(1) and (2) of this section. The operating limit for a PTE is specified in Table 4 to this subpart.

(1) During the capture efficiency determination required by §63.3540 and described in §§63.3543 and 63.3544, you must monitor and record either the gas volumetric flow rate or the duct static pressure for each separate capture device in your emission capture system at least once every 15 minutes during each of the three test runs at a point in the duct between the capture device and the add-on control device inlet.

(2) Calculate and record the average gas volumetric flow rate or duct static pressure for the three test runs for each capture device. This average gas volumetric flow rate or duct static pressure is the minimum operating limit for that specific capture device.

§63.3547 What are the requirements for continuous parameter monitoring system installation, operation, and maintenance?

(a) General. You must install, operate, and maintain each CPMS specified in paragraphs (c), (e), (f), and (g) of this section according to paragraphs (a)(1) through (6) of this section. You must install, operate, and maintain each CPMS specified in paragraphs (b) and (d) of this section according to paragraphs (a)(3) through (5) of this section.

(1) The CPMS must complete a minimum of one cycle of operation for each successive 15-minute period. You must have a minimum of four equally spaced successive cycles of CPMS operation in 1 hour.

(2) You must determine the average of all recorded readings for each successive 3-hour period of the emission capture system and add-on control device operation.

(3) You must record the results of each inspection, calibration, and validation check of the CPMS.

(4) You must maintain the CPMS at all times and have available necessary parts for routine repairs of the monitoring equipment.

(5) You must operate the CPMS and collect emission capture system and add-on control device parameter data at all times that a controlled coating operation is operating, except during monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, if applicable, calibration checks and required zero and span adjustments).

(6) You must not use emission capture system or add-on control device parameter data recorded during monitoring malfunctions, associated repairs, out of control periods, or required quality assurance or control activities when calculating data averages. You must use all the data collected during all other periods in calculating the data averages for determining compliance with the emission capture system and add-on control device operating limits.

(7) A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the CPMS to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions. Any period for which the monitoring system is out of control and data are not available for required calculations is a deviation from the monitoring requirements.

(b) Capture system bypass line. You must meet the requirements of paragraph (b)(1) or (2) of this section for each emission capture system that contains bypass lines that could divert emissions away from the add-on control device to the atmosphere.

(1) Properly install, maintain, and operate a flow indicator that takes a reading at least once every 15 minutes. The flow indicator shall be installed at the entrance to any bypass line.

(2) Secure the bypass line valve in the nondiverting position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure the valve is maintained in the nondiverting position and the vent stream is not diverted through the bypass line.

(c) Thermal oxidizers and catalytic oxidizers. If you are using a thermal oxidizer or catalytic oxidizer as an add-on control device (including those used with concentrators or with carbon adsorbers to treat desorbed concentrate streams), you must comply with the requirements in paragraphs (c)(1) through (3) of this section.

(1) For a thermal oxidizer, install a gas temperature monitor in the firebox of the thermal oxidizer or in the duct immediately downstream of the firebox before any substantial heat exchange occurs.

(2) For a catalytic oxidizer, install a gas temperature monitor according to paragraph (c)(2)(i) or (ii) of this section.

(i) If you establish operating limits according to §63.3546(b)(1) and (2), then you must install the gas temperature monitors both upstream and downstream of the catalyst bed. The temperature monitors must be in the

gas stream at the inlet to and the outlet of the catalyst bed to measure the temperature difference across the bed.

(ii) If you establish operating limits according to §63.3546(b)(3) and (4), then you must install a gas temperature monitor upstream of the catalyst bed. The temperature monitor must be in the gas stream at the inlet to the catalyst bed to measure the temperature.

(3) For all thermal oxidizers and catalytic oxidizers, you must meet the requirements in paragraphs (a) and (c)(3)(i) through (ii) of this section for each gas temperature monitoring device.

(i) Locate the temperature sensor in a position that provides a representative temperature.

(ii) Use a temperature sensor with a minimum accuracy of ±1.2 degrees Celsius or ±1 percent of the temperature value in degrees Celsius, whichever is larger.

(d) Carbon adsorbers. If you are using a carbon adsorber as an add-on control device, you must monitor the total regeneration desorbing gas (e.g., steam or nitrogen) mass flow for each regeneration cycle, the carbon bed temperature after each regeneration and cooling cycle, and comply with paragraphs (a)(3) through (5) and (d)(1) and (2) of this section.

(1) The regeneration desorbing gas mass flow monitor must be an integrating device having an accuracy of ±10 percent capable of recording the total regeneration desorbing gas mass flow for each regeneration cycle.

(2) The carbon bed temperature monitor must have a minimum accuracy of ±1.2 degrees Celsius or ±1 percent of the temperature value in degrees Celsius, whichever is larger, and must be capable of recording the temperature within 15 minutes of completing any carbon bed cooling cycle.

(e) Condensers. If you are using a condenser, you must monitor the condenser outlet (product side) gas temperature and comply with paragraphs (a) and (e)(1) and (2) of this section.

(1) The gas temperature monitor must have a minimum accuracy of ±1 percent of the temperature recorded in degrees Celsius or ±1.2 degrees Celsius, whichever is greater.

(2) The temperature monitor must provide a continuous gas temperature record.

(f) Concentrators. If you are using a concentrator such as a zeolite wheel or rotary carbon bed concentrator, you must comply with the requirements in paragraphs (f)(1) through (4) of this section.

(1) You must install a temperature monitor at the inlet to the desorption/reactivation zone of the concentrator. The temperature monitor must meet the requirements in paragraphs (a) and (c)(3) of this section.

(2) You must select an indicator(s) of performance of the desorption/reactivation fan operation, such as speed, power, static pressure, or flow rate.

(3) You must monitor the rotational speed of the concentrator in revolutions per hour.

(4) You must verify the performance of the adsorbent material by examining representative samples and testing adsorbent activity per the manufacturer's recommendations.

Compliance Requirements for the Control Efficiency/Outlet Concentration Option

§63.3550 By what date must I conduct performance tests and other initial compliance demonstrations?

(a) New and reconstructed affected sources. For a new or reconstructed source, you must meet the requirements of paragraphs (a)(1) through (4) of this section.

(1) All emission capture systems, add-on control devices, and CPMS must be installed and operating no later than the applicable compliance date specified in §63.3483. You must conduct a performance test of each capture system and add-on control device according to §§63.3553, 63.3554, and 63.3555 and establish the operating limits required by §63.3492 no later than 180 days after the applicable compliance date specified in §63.3483.

(2) You must develop and begin implementing the work practice plan required by §63.3493 no later than the compliance date specified in §63.3483.

(3) You must complete the initial compliance demonstration for the initial compliance period according to the requirements of §63.3551. The initial compliance period begins on the applicable compliance date specified in §63.3483 and ends on the last day of the 12th month following the compliance date. If the compliance date occurs on any day other than the first day of a month, then the initial compliance period extends through the end of that month plus the next 12 months. The initial compliance demonstration includes the results of emission capture system and add-on control device performance tests conducted according to §63.3553, 63.3554, and 63.3555; the operating limits established during the performance tests and the results of the continuous parameter monitoring required by §63.3557; and documentation of whether you developed and implemented the work practice plan required by §63.3493.

(4) You do not need to comply with the operating limits for the emission capture system and add-on control device required by §63.3492 until after you have completed the performance tests specified in paragraph (a)(1) of this section. Instead, you must maintain a log detailing the operation and maintenance of the emission capture system, add-on control device, and continuous parameter monitors during the period between the compliance date and the performance test. You must begin complying with the operating limits on the date you complete the performance tests specified in paragraph (a)(1) of this section.

(b) Existing affected sources. For an existing affected source, you must meet the requirements of paragraphs (b)(1) through (3) of this section.

(1) All emission capture systems, add-on control devices, and CPMS must be installed and operating no later than the applicable compliance date specified in §63.3483.

(2) You must develop and begin implementing the work practice plan required by §63.3493 no later than the compliance date specified in §63.3483.

(3) You must complete the initial compliance demonstration for the initial compliance period according to the requirements of §63.3551. The initial compliance period begins on the applicable compliance date specified in §63.3483 and ends on the last day of the 12th month following the compliance date. If the compliance date occurs on any day other than the first day of a month, then the initial compliance period extends through the end of that month plus the next 12 months. The initial compliance demonstration includes the results of emission capture system and add-on control device performance tests conducted according to §§63.3553, 63.3554, and 63.3555; the operating limits established during the performance tests and the results of the continuous parameter monitoring required by §63.3557; and documentation of whether you developed and implemented the work practice plan required by §63.3493.

§63.3551 How do I demonstrate initial compliance?

(a) You may use the control efficiency/outlet concentration option for any coating operation, for any group of coating operations within a subcategory or coating type segment, or for all of the coating operations within a subcategory or coating type segment. You must use the compliant material option, the emission rate without add-on controls option, or the emission rate with add-on controls option for any coating operation in the affected source for which you do not use the control efficiency/outlet concentration option. To demonstrate initial compliance, the coating operation(s) for which you use the control efficiency/outlet concentration option must meet the applicable levels of emission reduction in §63.3490. You must conduct a separate initial compliance demonstration for each one and two-piece draw and iron can body coating, sheetcoating, three-piece can body assembly coating, and end coating affected source. You must meet all the requirements of this section to demonstrate initial compliance with the emission limitations. When calculating the organic HAP emission rate according to this section, do not include any coatings or thinners used on coating operations for which you use the compliant material option, the emission rate without add-on controls option, or the emission rate with add-on controls option. You do not need to redetermine the mass of organic HAP in coatings or thinners that have been reclaimed onsite and reused in the coating operation(s) for which you use the emission rate with add-on controls option.

(b) Compliance with operating limits. You must establish and demonstrate continuous compliance during the initial compliance period with the operating limits required by §63.3492, using the procedures specified in §§63.3556 and 63.3557.

(c) Compliance with work practice requirements. You must develop, implement, and document your implementation of the work practice plan required by §63.3493 during the initial compliance period as specified in §63.3512.

(d) Compliance demonstration. To demonstrate initial compliance, the coating operation(s) for which you use the control efficiency/outlet concentration option must meet the applicable levels of emission reduction in §63.3490. You must keep all records applicable to the control efficiency/outlet concentration option as required by §§63.3512 and 63.3513. As part of the Notification of Compliance Status required by §63.3510, you must identify the coating operation(s) for which you used the control efficiency/outlet concentration option and submit a statement that the coating operation(s) was in compliance with the emission limitations during the initial compliance period because you achieved the operating limits required by §63.3492 and the work practice standards required by §63.3493.

§63.3552 How do I demonstrate continuous compliance with the emission limitations?

(a) To demonstrate continuous compliance with the emission limitations using the control efficiency/outlet concentration option, the organic HAP emission rate for each compliance period must be equal to or less than 20 ppmvd or must be reduced by the amounts specified in §63.3490. A compliance period consists of 12 months. Each month after the end of the initial compliance period described in §63.3550 is the end of a compliance period consisting of that month and the preceding 11 months.

(b) You must demonstrate continuous compliance with each operating limit required by §63.3492 that applies to you, as specified in Table 4 to this subpart. If an operating parameter is out of the allowed range specified in Table 4 to this subpart, this is a deviation from the operating limit that must be reported as specified in §§63.3510(b)(6) and 63.3511(a)(7).

(c) You must meet the requirements for bypass lines in §63.3557(b). If any bypass line is opened and emissions are diverted to the atmosphere when the coating operation is running, this is a deviation that must be reported as specified in §§63.3510(b)(6) and 63.3511(a)(7). For purposes of demonstrating compliance, you must treat the materials used during a deviation on a controlled coating operation as if they were used on an uncontrolled coating operation for the time period of the deviation.

(d) You must demonstrate continuous compliance with the work practice standards in §63.3493. If you did not develop a work practice plan or you did not implement the plan or you did not keep the records required by §63.3512(j)(8), this is a deviation from the work practice standards that must be reported as specified in §§63.3510(b)(6) and 63.3511(a)(7).

(e) As part of each semiannual compliance report required in §63.3511, you must identify the coating operation(s) for which you used the control efficiency/outlet concentration option. If there were no deviations from the operating limits or work practice standards, submit a statement that you were in compliance with the emission limitations during the reporting period because the organic HAP emission rate for each compliance period was less than 20 ppmvd or was reduced by the amount specified in §63.3490, and you achieved the operating limits required by §63.3492 and

the work practice standards required by §63.3493 during each compliance period.

(f) During periods of startup, shutdown, or malfunctions of the emission capture system, add-on control device, or coating operation that may affect emission capture or control device efficiency, you must operate in accordance with the SSMP required by §63.3500(c).

(g) Consistent with §§63.6(e) and 63.7(e)(1), deviations that occur during a period of startup, shutdown, or malfunction of the emission capture system, add-on control device, or coating operation that may affect emission capture or control device efficiency are not violations if you demonstrate to the Administrator's satisfaction that you were operating in accordance with the SSMP. The Administrator will determine whether deviations that occur during a period you identify as a startup, shutdown, or malfunction are violations, according to the provisions in §63.6(e).

(h) You must maintain records applicable to the control efficiency/outlet concentration option as specified in §§63.3512 and 63.3513.

§63.3553 What are the general requirements for performance tests?

(a) You must conduct each performance test required by §63.3550 according to the requirements of §63.7(e)(1) and under the conditions in this section unless you obtain a waiver of the performance test according to the provisions in §63.7(h).

(1) Representative coating operating conditions. You must conduct the performance test under representative operating conditions for the coating operation(s). Operations during periods of startup, shutdown, or malfunction and during periods of nonoperation do not constitute representative conditions. You must record the process information that is necessary to document operating conditions during the test and explain why the conditions represent normal operation.

(2) Representative emission capture system and add-on control device operating conditions. You must conduct the performance test when the emission capture system and add-on control device are operating at a representative flow rate, and the add-on control device is operating at a representative inlet concentration. You must record information that is necessary to document emission capture system and add-on control device operating conditions during the test and explain why the conditions represent normal operation.

(b) You must conduct each performance test of an emission capture system according to the requirements in §63.3554. You must conduct each performance test of an add-on control device according to the requirements in §63.3555.

§63.3554 How do I determine the emission capture system efficiency?

The capture efficiency of your emission capture system must be 100 percent to use the control efficiency/outlet concentration option. You may assume the capture system efficiency is 100 percent if both of the conditions in paragraphs (a) and (b) of this section are met.

(a) The capture system meets the criteria in Method 204 of appendix M to 40 CFR part 51 for a PTE and directs all the exhaust gases from the enclosure to an add-on control device.

(b) All coatings and thinners used in the coating operation are applied within the capture system, and coating solvent flash-off, curing, and drying occurs within the capture system. This criterion is not met if parts enter the open shop environment when being moved between a spray booth and a curing oven.

§63.3555 How do I determine the outlet THC emissions and add-on control device emission destruction or removal efficiency?

You must use the procedures and test methods in this section to determine either the outlet THC emissions or add-on control device emission destruction or removal efficiency as part of the performance test required by §63.3550. You must conduct three test runs as specified in §63.7(e)(3), and each test run must last at least 1 hour.

(a) For all types of add-on control devices, use the test methods specified in paragraphs (a)(1) through (5) of this section.

(1) Use Method 1 or 1A of appendix A to 40 CFR part 60, as appropriate, to select sampling sites and velocity traverse points.

(2) Use Method 2, 2A, 2C, 2D, 2F, or 2G of appendix A to 40 CFR part 60, as appropriate, to measure gas volumetric flow rate.

(3) Use Method 3, 3A, or 3B of appendix A to 40 CFR part 60, as appropriate, for gas analysis to determine dry molecular weight. You may also use as an alternative to Method 3B, the manual method for measuring the oxygen, carbon dioxide, and carbon monoxide content of exhaust gas in ANSI/ASME PTC 19.10-1981, “Flue and Exhaust Gas Analyses [Part 10, Instruments and Apparatus]” (incorporated by reference, see §63.14).

(4) Use Method 4 of appendix A to 40 CFR part 60 to determine stack gas moisture.

(5) Methods for determining gas volumetric flow rate, dry molecular weight, and stack gas moisture must be performed, as applicable, during each test run.

(b) Measure total gaseous organic mass emissions as carbon at the inlet and outlet of the add-on control device simultaneously using either Method 25 or 25A of appendix A to 40 CFR part 60 as specified in paragraphs (b)(1) through (3) of this section. You must use the same method for both the inlet and outlet measurements.

(1) Use Method 25 of appendix A to 40 CFR part 60 if the add-on control device is an oxidizer, and you expect the total gaseous organic concentration as carbon to be more than 50 ppm at the control device outlet.

(2) Use Method 25A of appendix A to 40 CFR part 60 if the add-on control device is an oxidizer, and you expect the total gaseous organic

concentration as carbon to be 50 ppm or less at the control device outlet.

(3) Use Method 25A of appendix A to 40 CFR part 60 if the add-on control device is not an oxidizer.

(4) You may use Method 18 of appendix A to 40 CFR part 60 to subtract methane emissions from measured total gaseous organic mass emissions as carbon.

(5) Alternatively, any other test method or data that have been validated according to the applicable procedures in Method 301 of 40 CFR part 63, appendix A, and approved by the Administrator may be used.

(c) If two or more add-on control devices are used for the same emission stream, then you must measure emissions at the outlet of each device. For example, if one add-on control device is a concentrator with an outlet for the high-volume dilute stream that has been treated by the concentrator and a second add-on control device is an oxidizer with an outlet for the low-volume, concentrated stream that is treated with the oxidizer, you must measure emissions at the outlet of the oxidizer and the high-volume dilute stream outlet of the concentrator.

(d) For each test run, determine the total gaseous organic emissions mass flow rates for the inlet and outlet of the add-on control device using Equation 1 of this section. If there is more than one inlet or outlet to the add-on control device, you must calculate the total gaseous organic mass flow rate using Equation 1 of this section for each inlet and each outlet and then total all of the inlet emissions and total all of the outlet emissions.

$$M_f = Q_{sd} C_C (12)(0.0416)\left(10^{-6}\right) \qquad \textbf{(Eq. 1)}$$

Where:

M_f = Total gaseous organic emissions mass flow rate, kg/h.

C_c = The concentration of organic compounds as carbon in the vent gas, as determined by Method 25 or Method 25A, ppmvd.

Q_{sd} = Volumetric flow rate of gases entering or exiting the add-on control device, as determined by Method 2, 2A, 2C, 2D, 2F, or 2G, dry standard cubic meters/hour (dscm/h).

0.0416 = Conversion factor for molar volume, kg-moles per cubic meter (mol/m^3) (@ 293 Kelvin (K) and 760 millimeters of mercury (mmHg)).

Note: If M_f is calculated in English units (lb/h), the conversion factor for molar volume is 0.00256 lb-moles per cubic foot (mol/ft^3).

(e) For each test run, determine the add-on control device organic emissions destruction or removal efficiency using Equation 2 of this section.

$$DRE = 100 \times \frac{M_{fi} - M_{fo}}{M_{fi}} \quad \textbf{(Eq. 2)}$$

Where:

DRE = Organic emissions destruction or removal efficiency of the add-on control device, percent.

M_{fi} = Total gaseous organic emissions mass flow rate at the inlet(s) to the add-on control device, using Equation 1 of this section, kg/h.

M_{fo} = Total gaseous organic emissions mass flow rate at the outlet(s) of the add-on control device, using Equation 1 of this section, kg/h.

(f) Determine the emission destruction or removal efficiency of the add-on control device as the average of the efficiencies determined in the three test runs and calculated in Equation 2 of this section.

§63.3556 How do I establish the emission capture system and add-on control device operating limits during the performance test?

During the performance test required by §63.3550 and described in §§63.3553, 63.3554, and 63.3555, you must establish the operating limits required by §63.3492 according to this section, unless you have received approval for alternative monitoring and operating limits under §63.8(f) as specified in §63.3492.

(a) Thermal oxidizers. If your add-on control device is a thermal oxidizer, establish the operating limits according to paragraphs (a)(1) and (2) of this section.

(1) During the performance test, you must monitor and record the combustion temperature at least once every 15 minutes during each of the three test runs. You must monitor the temperature in the firebox of the thermal oxidizer or immediately downstream of the firebox before any substantial heat exchange occurs.

(2) Use the data collected during the performance test to calculate and record the average combustion temperature maintained during the performance test. That average combustion temperature is the minimum operating limit for your thermal oxidizer.

(b) Catalytic oxidizers. If your add-on control device is a catalytic oxidizer, establish the operating limits according to either paragraphs (b)(1) and (2) or paragraphs (b)(3) and (4) of this section.

(1) During the performance test, you must monitor and record the temperature at the inlet to the catalyst bed and the temperature difference across the catalyst bed at least once every 15 minutes during each of the three test runs.

(2) Use the data collected during the performance test to calculate and record the average temperature at the inlet to the catalyst bed and the average temperature difference across the catalyst bed maintained during

the performance test. The average temperature difference is the minimum operating limit for your catalytic oxidizer.

(3) As an alternative to monitoring the temperature difference across the catalyst bed, you may monitor the temperature at the inlet to the catalyst bed and implement a site-specific inspection and maintenance plan for your catalytic oxidizer as specified in paragraph (b)(4) of this section. During the performance test, you must monitor and record the temperature at the inlet to the catalyst bed at least once every 15 minutes during each of the three test runs. Use the data collected during the performance test to calculate and record the average temperature at the inlet to the catalyst bed during the performance test. That is the minimum operating limit for your catalytic oxidizer.

(4) You must develop and implement an inspection and maintenance plan for your catalytic oxidizer(s) for which you elect to monitor according to paragraph (b)(3) of this section. The plan must address, at a minimum, the elements specified in paragraphs (b)(4)(i) through (iii) of this section.

(i) Annual sampling and analysis of the catalyst activity (i.e, conversion efficiency) following the manufacturer's or catalyst supplier's recommended procedures.

(ii) Monthly inspection of the oxidizer system, including the burner assembly and fuel supply lines for problems and, as necessary, adjust the equipment to assure proper air-to-fuel mixtures.

(iii) Annual internal and monthly external visual inspection of the catalyst bed to check for channeling, abrasion, and settling. If problems are found, you must take corrective action consistent with the manufacturer's recommendations and conduct a new performance test to determine destruction efficiency according to §63.3555.

(c) Regenerative oxidizers. If your add-on control device is a regenerative oxidizer, establish operating limits according to paragraphs (c)(1) and (2) of this section.

(1) You must establish all applicable operating limits according to paragraphs (a) and (b) of this section.

(2) You must submit a valve inspection plan that documents the steps taken to minimize the amount of leakage during the regenerative process. This plan can include, but is not limited to, routine inspection of key parameters of the valve operating system (e.g., solenoid valve operation, air pressure, hydraulic pressure), visual inspection of the valves during internal inspections, and/or actual testing of the emission stream for leakage.

(d) Carbon adsorbers. If your add-on control device is a carbon adsorber, establish the operating limits according to paragraphs (d)(1) and (2) of this section.

(1) You must monitor and record the total regeneration desorbing gas (e.g., steam or nitrogen) mass flow for each regeneration cycle, and the carbon bed temperature after each carbon bed regeneration and cooling

cycle for the regeneration cycle either immediately preceding or immediately following the performance test.

(2) The operating limits for your carbon adsorber are the minimum total desorbing gas mass flow recorded during the regeneration cycle and the maximum carbon bed temperature recorded after the cooling cycle.

(e) Condensers. If your add-on control device is a condenser, establish the operating limits according to paragraphs (e)(1) and (2) of this section.

(1) During the performance test, monitor and record the condenser outlet (product side) gas temperature at least once every 15 minutes during each of the three test runs.

(2) Use the data collected during the performance test to calculate and record the average condenser outlet (product side) gas temperature maintained during the performance test. This average condenser outlet gas temperature is the maximum operating limit for your condenser.

(f) Concentrators. If your add-on control device includes a concentrator, you must establish operating limits for the concentrator according to paragraphs (f)(1) through (7) of this section.

(1) During the performance test, monitor and record the inlet temperature to the desorption/reactivation zone of the concentrator at least once every 15 minutes during each of the three runs of the performance test.

(2) Use the data collected during the performance test to calculate and record the average temperature. This is the minimum operating limit for the desorption/reactivation zone inlet temperature.

(3) During the performance test, monitor and record an indicator(s) of performance for the desorption/reactivation fan operation at least once every 15 minutes during each of the three runs of the performance test. The indicator can be speed in rpm, power in amps, static pressure, or flow rate.

(4) Establish a suitable range for the parameter(s) selected based on the system design specifications, historical data, and/or data obtained concurrent with an emissions performance test. This is the operation limit range for the desorption/reactivation fan operation.

(5) During the performance test, monitor the rotational speed of the concentrator at least once every 15 minutes during each of the three runs of the performance test.

(6) Use the data collected during the performance test to calculate and record the average rotational speed. This is the minimum operating limit for the rotational speed of the concentrator. However, the indicator range for the rotational speed may be changed if an engineering evaluation is conducted and a determination made that the change in speed will not affect compliance with the emission limit.

(7) Develop and implement an inspection and maintenance plan for the concentrator(s) that you elect to monitor according to paragraph (f) of

this section. The plan must include, at a minimum, annual sampling and analysis of the absorbent material (i.e., adsorbent activity) following the manufacturer's recommended procedures.

(g) Emission capture systems. For each capture device that is part of a PTE that meets the criteria of §63.3554, the operating limit for a PTE is specified in Table 4 to this subpart.

§63.3557 What are the requirements for continuous parameter monitoring system installation, operation, and maintenance?

(a) General. You must install, operate, and maintain each CPMS specified in paragraphs (c), (e), (f), and (g) of this section according to paragraphs (a)(1) through (6) of this section. You must install, operate, and maintain each CPMS specified in paragraphs (b) and (d) of this section according to paragraphs (a)(3) through (5) of this section.

(1) The CPMS must complete a minimum of one cycle of operation for each successive 15-minute period. You must have a minimum of four equally spaced successive cycles of CPMS operation in 1 hour.

(2) You must determine the average of all recorded readings for each successive 3-hour period of the emission capture system and add-on control device operation.

(3) You must record the results of each inspection, calibration, and validation check of the CPMS.

(4) You must maintain the CPMS at all times and have available necessary parts for routine repairs of the monitoring equipment.

(5) You must operate the CPMS and collect emission capture system and add-on control device parameter data at all times that a controlled coating operation is operating, except during monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, if applicable, calibration checks and required zero and span adjustments).

(6) You must not use emission capture system or add-on control device parameter data recorded during monitoring malfunctions, associated repairs, out of control periods, or required quality assurance or control activities when calculating data averages. You must use all the data collected during all other periods in calculating the data averages for determining compliance with the emission capture system and add-on control device operating limits.

(7) A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the CPMS to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions. Any period for which the monitoring system is out of control and data are not available for required calculations is a deviation from the monitoring requirements.

(b) Capture system bypass line. You must meet the requirements of paragraph (b)(1) or (2) of this section for each emission capture system that contains bypass lines that could divert emissions away from the add-on control device to the atmosphere.

(1) Properly install, maintain, and operate a flow indicator that takes a reading at least once every 15 minutes. The flow indicator shall be installed at the entrance to any bypass line.

(2) Secure the bypass line valve in the nondiverting position with a car-seal or lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure the valve is maintained in the nondiverting position, and the vent stream is not diverted through the bypass line.

(c) Thermal oxidizers and catalytic oxidizers. If you are using a thermal oxidizer or catalytic oxidizer as an add-on control device (including those used with concentrators or with carbon adsorbers to treat desorbed concentrate streams), you must comply with the requirements in paragraphs (c)(1) through (3) of this section.

(1) For a thermal oxidizer, install a gas temperature monitor in the firebox of the thermal oxidizer or in the duct immediately downstream of the firebox before any substantial heat exchange occurs.

(2) For a catalytic oxidizer, install a gas temperature monitor according to paragraph (c)(2)(i) or (ii) of this section.

(i) If you establish operating limits according to §63.3556(b)(1) and (2), then you must install the gas temperature monitors both upstream and downstream of the catalyst bed. The temperature monitors must be in the gas stream at the inlet to and the outlet of the catalyst bed to measure the temperature difference across the bed.

(ii) If you establish operating limits according to §63.3556(b)(3) and (4), then you must install a gas temperature monitor upstream of the catalyst bed. The temperature monitor must be in the gas stream at the inlet to the catalyst bed to measure the temperature.

(3) For all thermal oxidizers and catalytic oxidizers, you must meet the requirements in paragraphs (a) and (c)(3)(i) through (ii) of this section for each gas temperature monitoring device.

(i) Locate the temperature sensor in a position that provides a representative temperature.

(ii) Use a temperature sensor with a minimum accuracy of ±1.2 degrees Celsius or ±1 percent of the temperature value in degrees Celsius, whichever is larger.

(d) Carbon adsorbers. If you are using a carbon adsorber as an add-on control device, you must monitor the total regeneration desorbing gas (e.g., steam or nitrogen) mass flow for each regeneration cycle, the carbon bed temperature after each regeneration and cooling cycle, and comply with paragraphs (a)(3) through (5) and (d)(1) and (2) of this section.

(1) The regeneration desorbing gas mass flow monitor must be an integrating device having an accuracy of ±10 percent capable of recording

the total regeneration desorbing gas mass flow for each regeneration cycle.

(2) The carbon bed temperature monitor must have a minimum accuracy of ±1.2 degrees Celsius or ±1 percent of the temperature value in degrees Celsius, whichever is larger, and must be capable of recording the temperature within 15 minutes of completing any carbon bed cooling cycle.

(e) Condensers. If you are using a condenser, you must monitor the condenser outlet (product side) gas temperature and comply with paragraphs (a) and (e)(1) and (2) of this section.

(1) The gas temperature monitor must have a minimum accuracy of ±1.2 degrees Celsius or ±1 percent of the temperature value in degrees Celsius, whichever is larger.

(2) The temperature monitor must provide a continuous gas temperature record.

(f) Concentrators. If you are using a concentrator such as a zeolite wheel or rotary carbon bed concentrator, you must comply with the requirements in paragraphs (f)(1) through (4) of this section.

(1) You must install a temperature monitor at the inlet to the desorption/reactivation zone of the concentrator. The temperature monitor must meet the requirements in paragraphs (a) and (c)(3) of this section.

(2) You must select an indicator(s) of performance of the desorption/reactivation fan operation, such as speed, power, static pressure, or flow rate.

(3) You must monitor the rotational speed of the concentrator in revolutions per hour.

(4) You must verify the performance of the adsorbent material by examining representative samples and testing adsorbent activity per the manufacturer's recommendations.

Other Requirements and Information

§63.3560 Who implements and enforces this subpart?

(a) This subpart can be implemented and enforced by us, the United States Environmental Protection Agency (U.S. EPA), or a delegated authority such as your State, local, or tribal agency. If the Administrator has delegated authority to your State, local, or tribal agency, then that agency, in addition to the EPA, has the authority to implement and enforce this subpart. You should contact your EPA Regional Office to find out if implementation and enforcement of this subpart is delegated to your State, local, or tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a State, local, or tribal agency under 40 CFR part 63, subpart E, the authorities contained in paragraph (c) of this section are

retained by the EPA Administrator and are not transferred to the State, local, or tribal agency.

(c) The authorities that will not be delegated to State, local, or tribal agencies are listed in paragraphs (c)(1) through (4) of this section.

(1) Approval of alternatives to the work practice standards in §63.3493.

(2) Approval of major alternatives to test methods under §63.7(e)(2)(ii) and (f) and as defined in §63.90.

(3) Approval of major alternatives to monitoring under §63.8(f) and as defined in §63.90.

(4) Approval of major alternatives to recordkeeping and reporting under §63.10(f) and as defined in §63.90.

§63.3561 What definitions apply to this subpart?
Terms used in this subpart are defined in the CAA, in 40 CFR 63.2, the General Provisions of this part, and in this section as follows:

Add-on control means an air pollution control device, such as a thermal oxidizer or carbon adsorber, that reduces pollution in an air stream by destruction or removal before discharge to the atmosphere.

Adhesive means any chemical substance that is applied for the purpose of bonding two surfaces together.

Aerosol can means any can into which a pressurized aerosol product is packaged.

Aseptic coating means any coating that must withstand high temperature steam, chemicals, or a combination of both used to sterilize food cans prior to filling.

Can body means a formed metal can, excluding the unattached end(s).

Can end means a can part manufactured from metal substrate equal to or thinner than 0.3785 millimeters (mm) (0.0149 inch) for the purpose of sealing the ends of can bodies including nonmetal or composite can bodies.

Capture device means a hood, enclosure, room, floor sweep, or other means of containing or collecting emissions and directing those emissions into an add-on air pollution control device.

Capture efficiency or capture system efficiency means the portion (expressed as a percentage) of the pollutants from an emission source that is delivered to an add-on control device.

Capture system means one or more capture devices intended to collect emissions generated by a coating operation in the use of coatings or cleaning materials, both at the point of application and at subsequent points where emissions from the coatings or cleaning materials occur, such as flash-off, drying, or curing. As used in this subpart, multiple

capture devices that collect emissions generated by a coating operation are considered a single capture system.

Cleaning material means a solvent used to remove contaminants and other materials such as dirt, grease, oil, and dried or wet coating (e.g., depainting) from a substrate before or after coating application or from equipment associated with a coating operation, such as spray booths, spray guns, racks, tanks, and hangers. Thus, it includes any cleaning material used on substrates or equipment or both.

Coating means a material applied to a substrate for decorative, protective, or functional purposes. Such materials include, but are not limited to, paints, sealants, caulks, inks, adhesives, and maskants. Fusion pastes, ink jet markings, mist solutions, and lubricants, as well as decorative, protective, or functional materials that consist only of protective oils for metal, acids, bases, or any combination of these substances, are not considered coatings for the purposes of this subpart.

Coating operation means equipment used to apply coating to a metal can or end (including decorative tins), or metal crown or closure, and to dry or cure the coating after application. A coating operation always includes at least the point at which a coating is applied and all subsequent points in the affected source where organic HAP emissions from that coating occur. There may be multiple coating operations in an affected source. Coating application with hand-held nonrefillable aerosol containers, touch-up markers, or marking pens is not a coating operation for the purposes of this subpart.

Coating solids means the nonvolatile portion of a coating that makes up the dry film.

Continuous parameter monitoring system (CPMS) means the total equipment that may be required to meet the data acquisition and availability requirements of this subpart; used to sample, condition (if applicable), analyze, and provide a record of coating operation, capture system, or add-on control device parameters.

Controlled coating operation means a coating operation from which some or all of the organic HAP emissions are routed through an emission capture system and add-on control device.

Crowns and closures means steel or aluminum coverings such as bottle caps and jar lids for containers other than can ends.

Decorative tin means a single-walled container, designed to be covered or uncovered that is manufactured from metal substrate equal to or thinner than 0.3785 mm (0.0149 inch) and is normally coated on the exterior surface with decorative coatings. Decorative tins may contain foods but are not hermetically sealed and are not subject to food processing steps such as retort or pasteurization. Interior coatings are not usually applied to protect the metal and contents from chemical interaction.

Deviation means any instance in which an affected source subject to this subpart or an owner or operator of such a source:

(1) Fails to meet any requirement or obligation established by this subpart including but not limited to any emission limit, operating limit, or work practice standard;

(2) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit; or

(3) Fails to meet any emission limit, operating limit, or work practice standard in this subpart during startup, shutdown, or malfunction regardless of whether or not such failure is permitted by this subpart.

Drum means a cylindrical metal container with walls of 29 gauge or thicker and a capacity greater than 45.4 liters (12 gal).

Emission limitation means an emission limit, operating limit, or work practice standard.

Enclosure means a structure that surrounds a source of emissions and captures and directs the emissions to an add-on control device.

End coating means the application of end seal compound or repair spray on can ends during manufacturing.

End seal compound means the coating applied onto ends of cans that functions to seal the end(s) of a can to the can body.

Exempt compound means a specific compound that is not considered a VOC due to negligible photochemical reactivity. The exempt compounds are listed in 40 CFR 51.100(s).

Food can means any can manufactured to contain edible products and designed to be hermetically sealed. Does not include decorative tins.

Fusion paste means a material used to attach nozzles and other miscellaneous parts to general line cans.

General line can means any can manufactured to contain inedible products. Does not include aerosol cans or decorative tins.

Ink jet marking means the ink and makeup fluid used for date code and other identification markings on a can for the marking on a can indicating when food in a can has completed the retort process.

Inside spray means a coating sprayed on the interior of a can body to provide a protective film between the can and its contents.

Lubricant means an organic liquid used as a lubricating agent to facilitate the handling and fabrication (e.g., tab making, stamping, or necking) of can bodies or ends.

Manufacturer’s formulation data means data on a material (such as a coating) that are supplied by the material manufacturer based on knowledge of the ingredients used to manufacture that material, rather than based on testing of the material with the test methods specified in §63.3521. Manufacturer's formulation data may include, but are not

limited to, information on density, organic HAP content, volatile organic matter content, and coating solids content.

Mass fraction of organic HAP means the ratio of the mass of organic HAP to the mass of a material in which it is contained, expressed as kg of organic HAP per kg of material.

Metal can means a single-walled container manufactured from metal substrate equal to or thinner than 0.3785 mm (0.0149 inch).

Mist solution means a hydrocarbon or aqueous solution used as an application aid with solvent-based or waterborne end seal compounds to prevent compound accumulation on the lining nozzle.

Month means a calendar month or a pre-specified period of 28 days to 35 days to allow for flexibility in recordkeeping when data are based on a business accounting period.

Nonaseptic coating means any coating that is not subjected to high temperature steam, chemicals, or a combination of both to sterilize food cans prior to filling.

One and two-piece draw and iron can means a steel or aluminum can manufactured by the draw and iron process. Includes two-piece beverage cans, two-piece food cans, and one-piece aerosol cans.

One-piece aerosol can means an aerosol can formed by the draw and iron process to which no ends are attached and a valve is placed directly on top.

Organic HAP content means the mass of organic HAP per volume of coating solids for a coating, calculated using Equation 1 of §63.3521. The organic HAP content is determined for the coating in the condition it is in when received from its manufacturer or supplier and does not account for any alteration after receipt.

Pail means a cylindrical or rectangular metal container with walls of 29 gauge or thicker and a capacity of 7.6 to 45.4 liters (2 to 12 gal) (for example, bucket).

Permanent total enclosure (PTE) means a permanently installed enclosure that meets the criteria of Method 204 of appendix M, 40 CFR part 51, for a PTE and that directs all the exhaust gases from the enclosure to an add-on control device.

Protective oil means an organic material that is applied to metal for the purpose of providing lubrication or protection from corrosion without forming a solid film. This definition of protective oil includes, but is not limited to, lubricating oils, evaporative oils (including those that evaporate completely), and extrusion oils.

Repair spray means a spray coating for post-formed easy-open ends to provide additional protection in the scored areas by covering breaks at the score location or to provide an additional layer of protective coating on the interior of the end for corrosion resistance.

Research or laboratory equipment means any equipment that is being used to conduct research and development of new processes and products, when such equipment is operated under the close supervision of technically trained personnel and is not engaged in the manufacture of final or intermediate products for commercial purposes, except in a de minimis manner.

Responsible official means responsible official as defined in 40 CFR 70.2.

Sheetcoating means a can manufacturing coating process that involves coating of flat metal sheets before they are formed into cans.

Side seam stripe means a coating applied to the interior and/or exterior of the welded or soldered seam of a three-piece can body to protect the exposed metal.

Startup, initial means the first time equipment is brought online in a facility.

Surface preparation means use of a cleaning material on a portion of or all of a substrate. That includes use of a cleaning material to remove dried coating which is sometimes called “depainting.”

Temporary total enclosure (TTE) means an enclosure constructed for the purpose of measuring the capture efficiency of pollutants emitted from a given source as defined in Method 204 of appendix M, 40 CFR part 51.

Thinner means an organic solvent that is added to a coating after the coating is received from the supplier.

Three-piece aerosol can means a steel aerosol can formed by the three-piece can assembly process manufactured to contain food or nonfood products.

Three-piece can assembly means the process of forming a flat metal sheet into a shaped can body which may include the processes of necking, flanging, beading, and seaming and application of a side seam stripe and/or an inside spray coating.

Three-piece food can means a steel can formed by the three-piece can assembly process manufactured to contain edible products and designed to be hermetically sealed.

Total volatile hydrocarbon (TVH) means the total amount of nonaqueous volatile organic matter determined according to Methods 204 and 204A through 204F of appendix M to 40 CFR part 51 and substituting the term TVH each place in the methods where the term VOC is used. The TVH includes both VOC and non-VOC.

Two-piece beverage can means a two-piece draw and iron can manufactured to contain drinkable liquids such as beer, soft drinks, or fruit juices.

Two-piece food can means a steel or aluminum can manufactured by the draw and iron process and designed to contain edible products other than beverages and to be hermetically sealed.

Uncontrolled coating operation means a coating operation from which none of the organic HAP emissions are routed through an emission capture system and add-on control device.

Volatile organic compound (VOC) means any compound defined as VOC in 40 CFR 51.100(s).

Volume fraction of coating solids means the ratio of the volume of coating solids (also known as volume of nonvolatiles) to the volume of coating; liters of coating solids per liter of coating.

Wastewater means water that is generated in a coating operation and is collected, stored, or treated prior to being discarded or discharged.

Tables to Subpart KKKK of Part 63

Table 1 to Subpart KKKK of Part 63. Emission Limits for New or Reconstructed Affected Sources

You must comply with the emission limits that apply to your affected source in the following table as required by §63.3490(a) through (c).

If you apply surface coatings to metal cans or metal can parts in this subcategory...	then for all coatings of this type...	you must meet the following organic HAP emission limit in kg HAP/liter solids (lbs HAP/gal solids)[a,b]:
1. One and two-piece draw and iron can body coating	**a.** two-piece beverage cans - all coatings	0.04 (0.31)
	b. two-piece food cans - all coatings	0.06 (0.50)
	c. one-piece aerosol cans - all coatings	0.08 (0.65)
2. Sheetcoating	sheetcoating	0.02 (0.17)
3. Three-piece can assembly	**a.** inside spray	0.12 (1.03)
	b. aseptic side seam stripes on food cans	1.48 (12.37)
	c. nonaseptic side seam stripes on food cans	0.72 (5.96)
	d. side seam stripes on general line nonfood cans	1.18 (9.84)
	e. side seam stripes on aerosol cans	1.46 (12.14)
4. End coating	**a.** aseptic end seal compounds	0.06 (0.54)
	b. nonaseptic end seal compounds	0.00 (0.00)
	c. repair spray coatings	0.64 (5.34)

[a] If you apply surface coatings of more than one type within any one subcategory you may calculate an OSEL according to §63.3531(i).
[b] Rounding differences in specific emission limits are attributable to unit conversions.

Table 2 to Subpart KKKK of Part 63. Emission Limits for Existing Affected Sources

You must comply with the emission limits that apply to your affected source in the following table as required by §63.3490(a) through (c).

If you apply surface coatings to metal cans or metal can parts in this subcategory...	then for all coatings of this type...	you must meet the following organic HAP emission limit in kg HAP/liter solids (lbs HAP/gal solids)[a,b]:
1. One and two-piece draw and iron can body coating	**a.** two-piece beverage cans - all coatings	0.07 (0.59)
	b. two-piece food cans - all coatings	0.06 (0.51)
	c. one-piece aerosol cans - all coatings	0.12 (0.99)
2. Sheetcoating	sheetcoating	0.03 (0.26)
3. Three-piece can assembly	**a.** inside spray	0.29 (2.43)
	b. aseptic side seam stripes on food cans	1.94 (16.16)
	c. nonaseptic side seam stripes on food cans	0.79 (6.57)
	d. side seam stripes on general line nonfood cans	1.18 (9.84)
	e. side seam stripes on aerosol cans	1.46 (12.14)
4. End coating	**a.** aseptic end seal compounds	0.06 (0.54)
	b. nonaseptic end seal compounds	0.00 (0.00)
	c. repair spray coatings	2.06 (17.17)

[a] If you apply surface coatings of more than one type within any one subcategory you may calculate an OSEL according to §63.3531(i).
[b] Rounding differences in specific emission limits are attributable to unit conversions.

Table 3 to Subpart KKKK of Part 63. Emission Limits for Affected Sources Using the Control Efficiency/Outlet Concentration Compliance Option

You must comply with the emission limits that apply to your affected source in the following table as required by §63.3490(d).

If you use the control efficiency/outlet concentration option to comply with the emission limitations for any coating operation(s)...	then you must comply with one of the following by using an emissions control system to...
1. in a new or reconstructed affected source	**a.** reduce emissions of total HAP, measured as THC (as carbon),[a] by 97 percent; **or**
	b. limit emissions of total HAP, measured as THC (as carbon)[a] to 20 ppmvd at the control device outlet and use a PTE.
2. in an existing affected source	**a.** reduce emissions of total HAP, measured as THC (as carbon),[a] by 95 percent; **or**
	b. limit emissions of total HAP, measured as THC (as carbon)[a] to 20 ppmvd at the control device outlet and use a PTE.

[a] You may choose to subtract methane from THC as carbon measurements.

Table 4 to Subpart KKKK of Part 63. Operating Limits if Using the Emission Rate with Add-on Controls Option or the Control Efficiency/Outlet Concentration Compliance Option

If you are required to comply with operating limits by §63.3492, you must comply with the applicable operating limits in the following table.

For the following device...	you must meet the following operating limit...	And you must demonstrate continuous compliance with the operating limit by...
1. thermal oxidizer	**a.** the average combustion temperature in each 3-hour block period must not fall below	**i.** collecting the combustion temperature data according to §63.3547(c) or §63.3557(c);
		ii. reducing the data to 3-hour block averages; and

For the following device...	you must meet the following operating limit...	And you must demonstrate continuous compliance with the operating limit by...
	the combustion temperature limit established according to §63.3546(a) or §63.3556(a).	**Iii.** maintaining the 3-hour block average combustion temperature at or above the temperature limit established according to §63.3546(a) or §6.3556(a).
2. catalytic oxidizer	**a.** the average temperature difference across the catalyst bed in each 3-hour period does not fall below the temperature difference limit established according to §63.3546(b)(2) or §63.3556(b)(2); or	**i.** collecting the temperature data according to §63.3547(c) or §6.3578(c);
		ii. reducing the data to 3-hour block averages; and
		Iii. maintaining the 3-hour block average temperature difference at or above the temperature difference limit established according to §63.3546(b)(2) or §6.3556(b)(2).
	b. the average temperature measured at the inlet to the catalyst bed in each 3-hour block period must not fall below the limit established according to §63.3546(b) or §63.3556(b); and	**i.** collecting the temperature data according to §63.3547(c) or §63.3557(c); and
		ii. reducing the data to 3-hour block averages, and
		Iii. maintaining the 3-hour block average temperature at the inlet to the catalyst bed at or above the temperature limit established according to §63.3546(b) or §6.3556(b).
	c. develop and implement an inspection and maintenance plan according to §63.3546(b)(4) or §63.3556(b)(4).	Maintaining an up-to-date inspection plan, records of annual catalyst activity checks, records of monthly inspections of the oxidizer system, and records of the annual internal inspections of the catalyst bed. If a problem is discovered during a monthly or annual inspection required by §63.3546(b)(4) or §63.3556(b)(4), you must take corrective action as soon as practicable consistent with the manufacturer’s recommendations.

For the following device...	you must meet the following operating limit...	And you must demonstrate continuous compliance with the operating limit by...
3. regenerative oxidizers	**a.** develop and implement a valve inspection plan according to §63.3546(c) or §63.3556(c); and either	Maintaining an up-to-date valve inspection plan. If a problem is discovered during an inspection required by §63.3546(c) or §63.3556(c), you must take corrective action as soon as practicable.
	b. if you are using a regenerative thermal oxidizer, follow the operating limits according to 1.a of this table; or	See all applicable items in 1.a of this table.
	c. if you are using a regenerative catalytic oxidizer, follow the operating limits according to item 2.a of this table.	See all applicable items in 2.a, 2.b, and 2.c of this table.
4. carbon adsorber	**a.** the total regeneration desorbing gas (e.g., steam or nitrogen) mass flow for each carbon bed regeneration cycle must not fall below the total regeneration desorbing gas mass flow limit established according to §63.3546(d) or §63.3556(d).	**i.** measuring the total regeneration desorbing gas (e.g., steam or nitrogen) mass flow for each regeneration cycle according to §63.3547(d) or §63.3557(d); and
		ii. maintaining the total regeneration desorbing gas mass flow at or above the mass flow limit.

For the following device...	you must meet the following operating limit...	And you must demonstrate continuous compliance with the operating limit by...
	b. the temperature of the carbon bed, after completing each regeneration and any cooling cycle, must not exceed the carbon bed temperature limit established according to §63.3546(d) or §63.3556(d).	**i.** measuring the temperature of the carbon bed, after completing each regeneration and any cooling cycle, according to §63.3547(d) or §63.3557(d); and
		ii. operating the carbon beds such that each carbon bed is not returned to service until completing each regeneration and any cooling cycle until the recorded temperature of the carbon bed is at or below the temperature limit.
5. condenser	**a.** the average condenser outlet (product side) gas temperature in each 3-hour period must not exceed the temperature limit established according to §63.3546(e) or §63.3556(e).	**i.** collecting the condenser outlet (product side) gas temperature according to §63.3547(e) or §63.3557(e);
		ii. reducing the data to 3-hour block averages; and
		Iii. maintaining the 3-hour block average gas temperature at the outlet at or below the temperature limit.
6. concen-trators, including zeolite wheels and rotary carbon adsorbers	**a.** the average inlet temperature measured from the desorption/ reactivation zone in each 3-hour block period must not fall below the limit established according to §63.3546(f) or §63.3556(f).	**i.** collecting the temperature data according to §63.3547(f) or §63.3557(f);
		ii. Reducing the data to 3-hour block averages; and
		Iii. Maintaining the 3-hour block average temperature at or above the temperature limit.

For the following device...	you must meet the following operating limit...	And you must demonstrate continuous compliance with the operating limit by...
	b. the indicator of performance for the desorption/ reactivation fan operation in each 3-hour block period must not fall outside of the range established according to §63.3546(f) or §63.3556(f).	**i.** collecting the indicator data according to §63.3547(f) or §63.3557(f); and
		ii. maintaining the indicator data within the range established.
	c. the nominal rotational speed of the concentrator in each 3-hour block period must not fall below the speed established according to §63.3546(f) or §63.3556(f).	**i.** collecting the rotational speed according to §63.3547(f) or §63.3557(f);
		ii. reducing the speed data to 3-hour block averages; and
		Iii. maintaining the 3-hour block average speed at or above the rotational speed limit.
	d. develop and implement an inspection and maintenance plan according to §63.3546(f)(3) or §63.3556(f)(3).	Maintaining an up-to-date inspection plan, and records of annual adsorbent activity checks. The results shall be compared to historical results and/or results for new adsorbents. If a problem is discovered during the annual inspection required by §63.3546(f)(3) or §63.3556(f)(3), you must take corrective action as soon as practicable consistent with the manufacturer's recommendations.
7. emission capture system that is a PTE according to §63.3544(a) or §63.3554(a)	**a.** the direction of the air flow at all times must be into the enclosure; and either	**i.** collecting the direction of air flow, and either the facial velocity of air through all natural draft openings **or** the pressure drop across the enclosure; and

For the following device...	you must meet the following operating limit...	And you must demonstrate continuous compliance with the operating limit by...
		ii. maintaining the facial velocity of air flow through all natural draft openings or the pressure drop at or above the facial velocity limit or pressure drop limit, and maintaining the direction of air flow into the enclosure at all times.
	b. the average facial velocity of air through all natural draft openings in the enclosure must be at least 200 feet per minute; or	See items 7.a.i and ii of this table.
	c. the pressure drop across the enclosure must be at least 0.007 inch H_2O, as established in Method 204 of appendix M to 40 CFR part 51.	See items 7.a.i and ii of this table.
8. emission capture system that is not a PTE according to §63.3544(a)	**a.** the average gas volumetric flow rate or duct static pressure in each duct between a capture device and add-on control device inlet in each 3-hour period must not fall below the average volumetric flow rate or duct static pressure limit established for that capture device according to §63.3546(g) .	**i.** collecting the gas volumetric flow rate or duct static pressure for each capture device according to §63.3547(g);
		ii. reducing the data to 3-hour block averages; and
		Iii. maintaining the 3-hour block average gas volumetric flow rate or duct static pressure for each capture device at or above the gas volumetric flow rate or duct static pressure limit.

Table 5 to Subpart KKKK of Part 63. Applicability of General Provisions to Subpart KKKK

You must comply with the applicable General Provisions requirements according to the following table.

Citation	Subject	Applicable to subpart KKKK	Explanation
§63.1(a)(1)-(4)	General Applicability	Yes	
§63.1(a)(5)	[Reserved]	No	
§63.1(a)(6)	Source Category Listing	Yes	
§63.1(a)(7)-(9)	[Reserved]	No	
§63.1(a)(10)-(12)	Timing and Overlap Clarifications	Yes	
§63.1(b)(1)	Initial Applicability Determination	Yes	Applicability to subpart KKKK is also specified in §63.3481.
§63.1(b)(2)	[Reserved]	No	
§63.1(b)(3)	Applicability Determination Recordkeeping	Yes	
§63.1(c)(1)	Applicability After Standard Established	Yes	
§63.1(c)(2)-(3)	Applicability of Permit Program for Area Sources	No	Area sources are not subject to subpart KKKK.
§63.1(c)(4)-(5)	Extensions and Notifications	Yes	
§63.1(e)	Applicability of Permit Program Before Relevant Standard is Set	Yes	
§63.2	Definitions	Yes	Additional definitions are specified in §63.3561.
§63.3(a)-(c)	Units and Abbreviations	Yes	
§63.4(a)(1)-(5)	Prohibited Activities	Yes	

Citation	Subject	Applicable to subpart KKKK	Explanation
§63.4(b)-(c)	Circumvention/ Fragmentation	Yes	
§63.5(a)	Construction/ Reconstruction	Yes	
§63.5(b)(1)-(6)	Requirements for Existing, Newly Constructed, and Reconstructed Sources	Yes	
§63.5(d)	Application for Approval of Construction/ Reconstruction	Yes	
§63.5(e)	Approval of Construction/ Reconstruction	Yes	
§63.5(f)	Approval of Construction/ Reconstruction Based on Prior State Review	Yes	
§63.6(a)	Compliance With Standards and Maintenance Requirements - Applicability	Yes	
§63.6(b)(1)-(7)	Compliance Dates for New and Reconstructed Sources	Yes	Section 63.3483 specifies the compliance dates.
§63.6(c)(1)-(5)	Compliance Dates for Existing Sources	Yes	Section 63.3483 specifies the compliance dates.
§63.6(e)(1)-(2)	Operation and Maintenance	Yes	
§63.6(e)(3)	SSMP	Yes	Only sources using an add-on control device to comply with the standard must complete SSMP.
§63.6(f)(1)	Compliance Except During Startup, Shutdown, and Malfunction	Yes	Applies only to sources using an add-on control device to comply with the standards.

Citation	Subject	Applicable to subpart KKKK	Explanation
§63.6(f)(2)-(3)	Methods for Determining Compliance	Yes	
§63.6(g)(1)-(3)	Use of an Alternative Standard	Yes	
§63.6(h)	Compliance With Opacity/Visible Emission Standards	No	Subpart KKKK does not establish opacity standards and does not require continuous opacity monitoring systems (COMS).
§63.6(i)(1)-(14)	Extension of Compliance	Yes	
§63.6(i)(15)	[Reserved]	No	
§63.6(i)(16)	Compliance Extensions and Administrator’s Authority	Yes	
§63.6(j)	Presidential Compliance Exemption	Yes	
§63.7(a)(1)	Performance Test Requirements - Applicability	Yes	Applies to all affected sources. Additional requirements for performance testing are specified in §§63.3543, 63.3544, 63.3545, 63.3554, and 63.3555.

Citation	Subject	Applicable to subpart KKKK	Explanation
§63.7(a)(2)	Performance Test Requirements - Dates	Yes	Applies only to performance tests for capture system and control device efficiency at sources using these to comply with the standards. Sections 63.3540 and 63.3550 specify the schedule for performance test requirements that are earlier than those specified in §63.7(a)(2).
§63.7(a)(3)	Performance Tests Required By the Administrator	Yes	
§63.7(b)-(e)	Performance Test Requirements - Notification, Quality Assurance, Facilities Necessary for Safe Testing, Conditions During Test	Yes	Applies only to performance tests for capture system and add-on control device efficiency at sources using these to comply with the standards.
§63.7(f)	Performance Test Requirements - Use of Alternative Test Method	Yes	Applies to all test methods except those used to determine capture system efficiency.
§63.7(g)-(h)	Performance Test Requirements - Data Analysis, Recordkeeping, Reporting, Waiver of Test	Yes	Applies only to performance tests for capture system and add-on control device efficiency at sources using these to comply with the standards.

Citation	Subject	Applicable to subpart KKKK	Explanation
§63.8(a)(1)-(3)	Monitoring Requirements - Applicability	Yes	Applies only to monitoring of capture system and add-on control device efficiency at sources using these to comply with the standards. Additional requirements for monitoring are specified in §§63.3547 and 63.3557.
§63.8(a)(4)	Additional Monitoring Requirements	No	Subpart KKKK does not have monitoring requirements for flares.
§63.8(b)	Conduct of Monitoring	Yes	
§63.8(c)(1)-(3)	Continuous Monitoring System (CMS) Operation and Maintenance	Yes	Applies only to monitoring of capture system and add-on control device efficiency at sources using these to comply with the standards. Additional requirements for CMS operations and maintenance are specified in §§63.3547 and 63.3557.
§63.8(c)(4)	CMS	No	Sections 63.3547 and 63.3557 specify the requirements for the operation of CMS for capture systems and add-on control devices at sources using these to comply.
§63.8(c)(5)	COMS	No	Subpart KKKK does not have opacity or visible emission standards.

Citation	Subject	Applicable to subpart KKKK	Explanation
§63.8(c)(6)	CMS Requirements	No	Sections 63.3547 and 63.3557 specify the requirements for monitoring systems for capture systems and add-on control devices at sources using these to comply.
§63.8(c)(7)	CMS Out-of-control Periods	Yes	
§63.8(c)(8)	CMS Out-of-control Periods Reporting	No	Section 63.3511 requires reporting of CMS out of control periods.
§63.8(d)-(e)	Quality Control Program and CMS Performance Evaluation	No	
§63.8(f)(1)-(5)	Use of an Alternative Monitoring Method	Yes	
§63.8(f)(6)	Alternative to Relative Accuracy Test	No	
§63.8(g)(1)-(5)	Data Reduction	No	Sections 63.3542, 63.3547, 63.3552 and 63.3557 specify monitoring data reduction.
§63.9(a)	Notification Applicability	Yes	
§63.9(b)(1)-(2)	Initial Notifications	Yes	
§63.9(b)(3)	[Reserved]	No	
§63.9(b)(4)-(5)	Application for Approval of Construction or Reconstruction	Yes	
§63.9(c)	Request for Extension of Compliance	Yes	

Citation	Subject	Applicable to subpart KKKK	Explanation
§63.9(d)	Special Compliance Requirement Notification	Yes	
§63.9(e)	Notification of Performance Test	Yes	Applies only to capture system and add-on control device performance tests at sources using these to comply with the standards.
§63.9(f)	Notification of Visible Emissions/ Opacity Test	No	Subpart KKKK does not have opacity or visible emission standards.
§63.9(g)(1)-(3)	Additional Notifications When Using CMS	No	
§63.9(h)(1)-(3)	Notification of Compliance Status	Yes	Section 63.3510 specifies the dates for submitting the notification of compliance status.
§63.9(h)(4)	[Reserved]	No	
§63.9(h)(5)-(6)	Clarifications	Yes	
§63.9(i)	Adjustment of Submittal Deadlines	Yes	
§63.9(j)	Change in Previous Information	Yes	
§63.10(a)	Recordkeeping/ Reporting - Applicability and General Information	Yes	
§63.10(b)(1)	General Recordkeeping Requirements	Yes	Additional requirements are specified in §§63.3512 and 63.3513.

Citation	Subject	Applicable to subpart KKKK	Explanation
§63.10(b)(2)(i)-(v)	Recordkeeping Relevant to Startup, Shutdown, and Malfunction Periods and CMS	Yes	Requirements for Startup, Shutdown, and Malfunction records only apply to add-on control devices used to comply with the standards.
§63.10(b)(2)(vi)-(xi)		Yes	
§63.10(b)(2)(xii)	Records	Yes	
§63.10(b)(2)(xiii)		No	
§63.10(b)(2)(xiv)		Yes	
§63.10(b)(3)	Recordkeeping Requirements for Applicability Determinations	Yes	
§63.10(c)(1)	Additional Recordkeeping Requirements for Sources with CMS	Yes	
§63.10(c)(2)-(4)	[Reserved]	No	
§63.10(c)(5)-(6)		Yes	
§63.10(c)(7)-(8)		No	The same records are required in §63.3511(a)(7).
§63.10(c)(9)	[Reserved]	No	
§63.10(c)(10)-(15)		Yes	
§63.10(d)(1)	General Reporting Requirements	Yes	Additional requirements are specified in §63.3511.
§63.10(d)(2)	Report of Performance Test Results	Yes	Additional requirements are specified in §63.3511(b).

Citation	Subject	Applicable to subpart KKKK	Explanation
§63.10(d)(3)	Reporting Opacity or Visible Emissions Observations	No	Subpart KKKK does not require opacity or visible emissions observations.
§63.10(d)(4)	Progress Reports for Sources With Compliance Extensions	Yes	
§63.10(d)(5)	Startup, Shutdown, and Malfunction Reports	Yes	Applies only to add-on control devices at sources using these to comply with the standards.
§63.10(e)(1)-(2)	Additional CMS Reports	No	
§63.10(e)(3)	Excess Emissions/CMS Performance Reports	No	Section 63.3511(b) specifies the contents of periodic compliance reports.
§63.10(e)(4)	COMS Data Reports	No	Subpart KKKK does not specify requirements for opacity or COMS.
§63.10(f)	Recordkeeping/ Reporting Waiver	Yes	
§63.11	Control Device Requirements/ Flares	No	Subpart KKKK does not specify use of flares for compliance.
§63.12	State Authority and Delegations	Yes	
§63.13	Addresses	Yes	
§63.14	Incorporation by Reference	Yes	
§63.15	Availability of Information/ Confidentiality	Yes	

Table 6 to Subpart KKKK of Part 63. Default Organic HAP Mass Fraction for Solvents and Solvent Blends

You may use the mass fraction values in the following table for solvent blends for which you do not have test data or manufacturer's formulation data.

Solvent/Solvent blend	CAS. No.	Average Organic HAP Mass Fraction	Typical Organic HAP, Percent by Mass
1. Toluene	108-88-3	1.0	Toluene
2. Xylene(s)	1330-20-7	1.0	Xylenes, ethylbenzene
3. Hexane	110-54-3	0.5	n-hexane
4. n-Hexane	110-54-3	1.0	n-hexane
5. Ethylbenzene	100-41-4	1.0	Ethylbenzene
6. Aliphatic 140		0	None
7. Aromatic 100		0.02	1% xylene, 1% cumene
8. Aromatic 150		0.09	Naphthalene
9. Aromatic naphtha	64742-95-6	0.02	1% xylene, 1% cumene
10. Aromatic solvent	64742-94-5	0.1	Naphthalene
11. Exempt mineral spirits	8032-32-4	0	None
12. Ligroines (VM & P)	8032-32-4	0	None
13. Lactol spirits	64742-89-6	0.15	Toluene
14. Low aromatic white spirit	64742-82-1	0	None
15. Mineral spirits	64742-88-7	0.01	Xylenes
16. Hydrotreated naphtha	64742-48-9	0	None
17. Hydrotreated light distillate	64742-47-8	0.001	Toluene
18. Stoddard solvent	8052-41-3	0.01	Xylenes
19. Super high-flash naphtha	64742-95-6	0.05	Xylenes
20. Varsol® solvent	8052-49-3	0.01	0.5% xylenes, 0.5% ethylbenzene
21. VM & P naphtha	64742-89-8	0.06	3% toluene, 3% xylene
22. Petroleum distillate mixture	68477-31-6	0.08	4% naphthalene, 4% biphenyl

Table 7 to Subpart KKKK of Part 63. Default Organic HAP Mass Fraction for Petroleum Solvent Groups[a]

You may use the mass fraction values in the following table for solvent blends for which you do not have test data or manufacturer's formulation data.

Solvent Type	Average Organic HAP Mass Fraction	Typical organic HAP, percent by mass
Aliphatic[b]	0.03	1% Xylene, 1% Toluene, and 1% Ethylbenzene
Aromatic[c]	0.06	4% Xylene, 1% Toluene, and 1% Ethylbenzene

a Use this table only if the solvent blend does not match any of the solvent blends in Table 6 to this subpart and you only know whether the blend is aliphatic or aromatic.

b e.g., Mineral Spirits 135, Mineral Spirits 150 EC, Naphtha, Mixed Hydrocarbon, Aliphatic Hydrocarbon, Aliphatic Naphtha, Naphthol Spirits, Petroleum Spirits, Petroleum Oil, Petroleum Naphtha, Solvent Naphtha, Solvent Blend.

c e.g., Medium-flash Naphtha, High-flash Naphtha, Aromatic Naphtha, Light Aromatic Naphtha, Light Aromatic Hydrocarbons, Aromatic Hydrocarbons, Light Aromatic Solvent.

APPENDIX A

LIST OF EQUIPMENT
REXAM Beverage Can Company
V95005

PERMITTED EQUIPMENT:

Equipment Description	Stack / Vent No.	Make/Model/Serial No.	Installation Date	Modification Date	Rated Capacity
Can Printers:					
Line #1	S014	Rutherford – S/N 13744	1976	NA	1,100 cans/min
Line #2	S014	Rutherford – S/N 13750	1976	NA	1,380 cans/min
Line #3	S014	Rutherford – S/N 13500	1989	NA	1,400 cans/min
Pin Ovens:					
Line #1	S001	FECO Asset #PX16100097	1976	NA	4.0 MMBtu/Hr
Line #2	S003	MOCO – S/N 064424-V520	1989	NA	2.5 MMBtu/Hr
Line #3	S005	MOCO - S/N 6379	1989	NA	2.5 MMBtu/Hr
Inside Spray Machines:					
Line #1	S011	-	1976	2004/5	1,100 cans/min
Line #2	S012	-	1976	2004/5	1,380 cans/min
Line #3	S013	-	1989	2004/5	1,400 cans/min
Inside Bake Ovens:					
Line #1	S002	MOCO – S/N 6442IBO	1976	NA	5.2 MMBtu/Hr
Line #2	S006/S007	FECO – S/N 15295	1976	2004/5	5.2 MMBtu/Hr
Line #3	S006/S007	MOCO – S/N 6378	1989	2004/5	3.0 MMBtu/Hr
Washer/Dryer:					
Zone 1	S008	Cincinnati S/O BS-800-C112	1976	NA	3.6 MMBtu/Hr
Zone 2	S009	Cincinnati S/O BS-800-C112	1989	NA	3.2 MMBtu/hr
BANOIL® Oil Mist Collection System:					
OBP-1	-	Ohio Blow Pipe	2003	NA	10,200 cfm
OBP-2	-	Ohio Blow Pipe	2003	NA	10,200 cfm
Other:					
Boiler	S010	AJAX WGN 4000w	2004	NA	4 MMBtu/hr
Catalytic Oxidizer	S004	HIRT – S/N 611B1089	1989	NA	9.0 MMBtu/hr
Regenerative Thermal Oxidizer	S015	To Be Determined	2004/5	NA	4.5 MMBtu/hr
Baghouse	NA	To Be Determined	2004/5	NA	3000 SCFM
Degreaser – Shop #1	-	Safety Kleen	-	NA	30” x 48” x 42” with agitator
Degreaser – Shop #2	-	Safety Kleen	-	NA	20” x 36” x 14”
Degreaser – Front end	-	Safety Kleen	-	NA	22” x 34” x 18”

Notes:
NA = Not Applicable

REXAM Beverage Can Company
Technical Support Document

Table of Contents

February 24, 2004

Facility Name:	**Rexam Beverage Can Company**
Address:	211 North 51st Avenue
City, State, Zip:	Phoenix, AZ 85043
Operating Permit #:	
Permit Application #:	V95-005
Date Application Received:	August 30, 1995
Permit Engineer:	Brock Rogers
TSD Revision Date:	April 19, 2005

1. INTRODUCTION:

This document summarizes the legal and factual basis for the proposed permit conditions in the Rexam Beverage Can Company (hereafter, Rexam) Title V Operating Permit to be issued under the authority of Rule 200 §302 of the Maricopa County Air Pollution Control Regulations; Title 49, Chapter 3 of the Arizona Revised Statutes (ARS); and Title V of the federal Clean Air Act (CAA), as amended in 1990. Unlike the permit, this document is not a legally enforceable document. It includes references to the applicable statutory or regulatory provisions that relate to Rexam's air emissions, and provides a description of Rexam's activities, including a compliance history.

Rexam (formerly American National Can Company) began operating at their current location in 1977 and is currently permitted under permit number 8700074. Rexam's facility is located in an area within Maricopa County that is currently designated as non-attainment for ozone, carbon monoxide and PM_{10}. Due to the amendments in 1990 to the federal CAA, Rexam was designated as a major source for Hazardous Air Pollutants (HAPs). In addition, pursuant to Maricopa County Air Pollution Control Regulations, Rexam is classified as a major source of volatile organic compounds (VOC). Therefore, Rexam is subject to the Title V permitting procedures.

Maricopa County Environmental Services Department (MCESD) received the original Title V permit application on August 30, 1995. Several revisions and addenda to the original application were received by MCESD in response to incompleteness letters and requests for additional information.

2. SOURCE DESCRIPTION:

2.1. Process Description and Pollutant Emissions:

Rexam operates a 2-piece aluminum can manufacturing facility that produces and coats aluminum beverage cans (Standard Industrial Classification (SIC) Code 3411). The facility has three can production lines. Rexam is currently operating two 12-hour shifts per day, 7 days per week, 52 weeks per year.

The primary air pollution concerns from Rexam are VOCs, (which are precursors to the formation of ozone, which is a criteria pollutant) and HAPs, both from coating the interior and exterior of aluminum cans. Particulate matter with an aerodynamic diameter less than 10

microns (PM_{10}), nitrogen oxides (NOx), and carbon monoxide (CO), are not emitted from Rexam's facility in quantities exceeding their respective major source thresholds pursuant to Maricopa County Rule 240 §210.

The following is an overview of specific processes in Rexam's production process.

2.1.1. Cupper:

Aluminum coil is delivered to the plant by truck. The coil is stored in the warehouse until needed. Coil is loaded by forklist onto the uncoiler. The coil of aluminum stock is uncoiled and continuously fed into the cupper. The aluminum passes through a lubricating apparatus, which applies a lubricant (DTI 5600-WB2) used to cool and lubricate the cupping press dies. The coil then passes through on to the cupper. Inside the cupper, a two step process takes place. A stamp descends and cuts a coin shaped disk from the sheet. Almost simultaneously, a "die" descends through the stamp and shapes the disk into a cup approximately 3 inches in diameter and 2.5 inches in length. Cups are carried away from the cupper by a vacuum conveyor. Scrap aluminum created during the cupping operation is carried by vacuum tube to a baler where it is compacted for recycling along with any other scrap created during the manufacturing process. Emissions from this process are trivial.

2.1.2. Bodymaker:

The bodymaker performs the drawing and ironing of the can. In the bodymaker, a cup is seated between a series of tooling and a punch. The cam driven punch pushes the cup through three irons of descending size. The cup walls are elongated as it passes through each iron. After passing through the third iron in the series, the can is pushed up against a die which creates the dome in the base of the can. As the punch retracts, the can is stripped from it, completing the operation in less than one third of a second. The bodymaker operation generates oil mist, which is collected and filtered by a 10,200 cfm oil mist collection system. The oil mist is considered particulate matter and also has a VOC component. In addition, located near the washer entrance, a lubricant recycling system removes the fine aluminum shavings created during the shaping process. Lubricant passes through a media filter and is returned to the bodymakers.

2.1.3. Trimmer:

As each can is formed, it is picked up by a transfer mechanism and transferred to the trimmer. The trimmer trims the unfinished edges of the can. Emissions from this process are trivial.

2.1.4. Washer:

Cans are conveyed to the washer for removal of lubricants used during the shaping process. The washer consists of six stages. The first two stages include a dilute acid wash using sulfuric acid and hydrofluoric acid. The cans then follow through progressive rinse stages, ending with a de-ionized water rinse. A 3.5 MMBtu/hr natural gas-fired boiler is used to provide heated wash water. The dryers associated with the washing process are heated by two natural gas-fired ovens having a maximum fuel input rating of 3.2 MMBtu/hr and 3.6 MMBtu/hr. Washer chemical concentrations are maintained by a computer and ensured through physical checks. Wastewater is sent to the wastewater

pretreatment system that consists of pH adjustment and heavy metals precipitation. The treated water is discharged to the local community sanitary sewer. Emissions from the washing process consist of a small quantity of hydrofluoric acid (≈ 26 pounds per year) and products of natural gas combustion.

2.1.5. Palletization:

The washed cans ("brites") are palletized for temporary storage in the event undecorated can output exceeds decorator capacity. Likewise, if undecorated can output falls below decorator capacity, "brites" can be introduced back into the system at the palletizer. There are no emissions associated with the process.

2.1.6. Printer:

The cans are conveyed to the printer, where the outside of the can is decorated and a protective coat of overvarnish is applied over the printing and on the bottom of the can. The ink and overvarnish contain VOCs and/or HAPs, which are emitted during application and conveyance to the next process. There are three printer lines with a combined throughput capacity of 3,900 cans per minute. The decoration process consists of five major subcomponents: infeed, defect detection and evacuation, decoration, outer coating, and outfeed to oven. During infeed, cans are gravity fed single file and vacuum mounted on mandrels. A mandrel is a support which allows the can to be decorated without being crushed. If the can is not properly seated or is damaged, it will be ejected from the operation by a burst of air. Ink is applied using an offset lithographic process. Ink flows through the inkers and is regulated by a series of rollers. A final roller applies the ink to a cylinder between the inker and the blanket drum. Each blanket on the drum carries all colors of ink and applies it to the can on the mandrel drum. The can passes a varnish station while still on the mandrel. This outer varnish provides a protective coating to the printed decoration. A transfer assembly then loads the can onto a pin chain. Just prior to the cans entering the pin oven for curing, a small amount of varnish is applied to the base of the can. This varnish ensures mobility during the customer's filling process. The VOC and HAP emissions from this process are uncontrolled.

2.1.7. Pin Oven:

There are three printer drying ovens (2 @2.5 MMbtu/hr, 1 @4 MMbtu/hr) used to cure the over varnish and bottom varnish. VOC and HAP emissions from these ovens are uncontrolled and vented through stacks on the roof of the building. The are also emissions associated with the combustion of natural gas.

2.1.8. Inside Spray Machine:

Cans are arranged single file and conveyed to the inside spray machines where they receive a lacquer coating on the inside of the can. The coating is to ensure that the beverage inside the can will not contact aluminum. Each can spins as the coating is sprayed, ensuring an even application. There are three inside spray machine lines, each with six spray heads. The combined throughput capacity of all three lines, with all spray heads operating, is 3,900 cans per minute. Overspray is captured via duct-work (i.e., overspray sleeve) partially surrounding the spray heads. Rexam estimates that approximately 90% of the captured overspray agglomerates in the overspray sleeves and approximately 0.6% of inside spray coating solids are released to the atmosphere via

stacks on the roof of the building. After the inside spray coating is applied, the cans are conveyed to the inside bake ovens, where the inside spray coating is cured. VOC and HAP emissions from the inside spray coating process are uncontrolled. Based on prior test results, Rexam estimates that approximately 13% of the VOCs and HAPs applied during this process are emitted to the atmosphere prior to the cans entering the curing ovens.

2.1.9. Inside Bake Oven (IBO):

There are three IBOs (2 @5.2 MMbtu/hr, 1 @3.0 MMbtu/hr) which cure the inside coating of the cans. VOC and HAP emissions from IBO Line 1 are vented directly to the atmosphere. VOC and HAP emissions from IBO Lines 2 and 3 are captured and vented to a catalytic oxidizer. The are also emissions associated with the combustion of natural gas.

2.1.10. Catalytic Oxidizer:

The catalytic oxidizer receives VOC emissions from IBO Lines 2 and 3. Based on performance testing conducted in February 1992, 87% of VOC emissions, starting at the inside spray machine, are captured by the catalytic oxidizer. An overall control efficiency of 83% was demonstrated. For emissions estimating purposes, Rexam has assumed an overall control efficiency of 80%. The are also emissions associated with the combustion of natural gas from this process.

2.1.11. Waxing Station:

Cans leave the oven by conveyor and are carried up to the waxing station. A thin coat of wax is applied to the outer top portion of the can prior to final shaping. There are no emissions associated with the process.

2.1.12. Necking:

The final shaping process, called “necking”, reduces the diameter of the top portion of the can. Inside the necker, the can passes through a series of eleven die processes, the first ten of which gradually impart an angle to the top of the can. The last set of dies creates the flanged top of the can which will be used to mount and seam the lid after filling the can with beverage. At the same time, a group of bearings, called a “reformer”, manipulates the dome on the bottom of the can, making it slightly more cylindrical to increase strength. There are no emissions associated with the process.

2.1.13. Palletizer:

After final shaping, cans are conveyed to the palletizer where they are prepared for shipment. Cans are grouped in layers of 389, with up to 21 layers per pallet. There are no emissions associated with the process. The entire process, from a piece of sheet metal to a fully decorated, two-piece, drawn and ironed aluminum beverage can, packaged and ready for shipment to a filler plant, takes approximately 30 minutes.

3. COMPLIANCE HISTORY:

Table 3.1 provides the dates of inspections and the compliance status of Rexam's facility. The information provided in the table was obtained from a review of MCESD's files. Table 3.2 provides a summary of compliance issues such as notices of violation, compliance status notification, notices to correct, follow-up items required following a facility inspection.

Table 3.1 – Compliance Inspection History

Date	Inspection Type	Compliance Status	Notes
9-27-1983	Compliance Inspection	In compliance	
9-21-1984	Compliance Inspection	In compliance	
1-30-1985	Compliance Inspection	In compliance	
10-7-1985	Compliance Inspection	In compliance	
8-1-1989	Compliance Inspection	In compliance	
9-11-1990	Compliance Inspection	In compliance	
7-1-1991	Compliance Inspection	In compliance	Facility is in compliance with Rule 336 – Low VOC Solvent Coatings.
8-30-1991	Compliance Test Inspection	Compliance not demonstrated	Deficiency in performance test results.
11-30-1992	Compliance Test Review	In compliance	Performance test showing capture and control efficiencies of VOC control system. The system previously failed emission test under operating permit 9101054. Operating problems resolved and system expanded under installation permit 9101324 to include emission from Line 2.
12-23-1992	Compliance Inspection	In compliance	
8-14-1995	Compliance Inspection	1 NOV (#34796) 4 NTCs	See description of NOV and NTCs in Table 3.2.
2-18-1998	Compliance Inspection	Follow-up Required	Rexam not maintaining 20°F temperature rise across the catalytic oxidizer bed. This issue was identified in the last inspection, but the issue was never resolved. The follow-up item required was for a meeting to be scheduled between Rexam and MCESD to resolve the issue.
8-28-2000	Compliance Inspection	2 CSNs	See description of CSNs in Table 3.2.
12-11-2001	Compliance Inspection	2 CSNs	See description of CSNs in Table 3.2.
1-28-2002	Re-Inspection	In Compliance	
1-21-2003	Compliance Inspection	1 NOV, 1 CSN	See description of NOV and CSN in Table 3.2.

Note:
NOV = Notice of Violation; NTC = Notice to Correct; CSN = Compliance Status Notification

Table 3.2 – Summary of Compliance Issues

Date	Action	Description
1991	Complaint	Complaint of smoke at night. This information was obtained from a Source File Review document dated 12-2-1992. No other information regarding this complaint is available in MCESD's current files.
6-17-1991	Compliance Test Review (compliance not demonstrated)	• Performance testing was deficient and compliance had not been demonstrated. • 3rd production line cannot legally operate without an operating permit. • An Operating permit cannot be granted without demonstration of compliance. • Maricopa County ordered American National Can Co. to immediately shut down the 3rd production line and submit a plan of action to bring the facility in compliance. • Operating the 3rd production line would be a violation of Maricopa County Air Pollution Regulation II, Rule 200 §301 and Rule 220 §§ 301 and 302.
8-15-1991	Compliance Letter Issued (compliance not demonstrated)	• Maricopa County restated that American National Can Co. is not allowed to operate the 3rd production line and the additional spray heads without adequate compliance demonstration. • Maricopa County informed American National Can Co. that the test report for the performance test conducted in June 1991 had not been received. • Maricopa County restated that American National Can Co. is not to be operating the 3rd production line or the 6th spray head on the two existing production lines.
8-22-1991	NOV	NOV: Operating without an Operating Permit. This information was obtained from a Source File Review document dated 12-2-1992. No other information regarding this NOV is available in MCESD's current files.
8-23-1991	NOV	NOV: Operating without an Operating Permit. This information was obtained from a Source File Review document dated 12-2-1992. No other information regarding this NOV is available in MCESD's current files.
9-11-1991	NOV (Docket No. 9-91-50)	EPA issued NOV pursuant to §113(a)(1) of CAA. Violation of Maricopa County portion of Arizona SIP which required American National Can Company to obtain an NSR permit prior to construction of major modification (i.e., installation of production line 3). In May 2003, MCESD inquired with EPA Region 9 regarding this NOV. According to Mr. John Brock, Mr. John Borton, and Mr. Steven Armsey of EPA, they were unable to locate records of any NOV issued to American National Can Company or Rexam by EPA.
8-14-1995	1 NOV (#34796) 4 NTCs	NOV #34796: Failure to maintain at least a 20°F temperature rise across the catalyst on the oxidizer as required by Permit Conditions I.D (Oct. 1, 1992) NTC: 1. Amended O&M Plan required for catalytic oxidizer 2. Oxidizer door was open during inspection. Door must be kept closed while in oxidizer is operating. Latching mechanism must be repaired. 3. Mix ratio of "Spree" cleaner to water is required to be reported to Department 4. Magnus-Magna Lift Degreaser was not included on permit. Date of installation and mix ratio of Mirachem 500 Cleaner/Degreaser to water is required.
4-24-1997	Oxidizer malfunction	MCESD received letter from Rexam documenting oxidizer malfunction on 4-22-97 for 2.5 hours.
4-28-1997	Oxidizer malfunction	MCESD received letter from Rexam documenting oxidizer malfunction on 4-28-97 for 1 hour.
8-28-2000	2 CSNs and 3 follow-up items requested	All CSNs and requested follow-up items were addressed by Rexam to MCESD satisfaction by 11-3-2000 1. CSN #SD-09-06-00-01 – Failure to store solvent-soaked rags in closed containers when not in use. To address non-compliance with Rule 330 §306.1, Rexam must ensure solvent-soaked rags are deposited into container having covers that remain closed. 2. CSN #SD-09-06-00-02 – Failure to conduct preventive maintenance (PM) procedures according to the schedule stated in the approved O&M Plan (monthly PM

Date	Action	Description
		on the Hirt catalytic oxidizer). To address non-compliance with Rule 336 §306.2c, Rexam must ensure all scheduled preventive maintenance on the Hirt catalytic oxidizer is performed at the frequency specified in approved O&M Plan. Documentation of how this will be achieved was required. 3. Chart recordings of inlet temperature to catalytic oxidizer are different that the digital temperature display. Investigation into the issue was required. Documentation stating nature of findings is required. 4. Documentation indicating the date of the last 6-month preventive maintenance procedure was conducted was required. 5. Recommended that the catalytic oxidizer pressure monitoring devices is capable of accurately monitoring the full range of pressure under which the catalytic oxidizer may operate.
9-22-2000	Oxidizer malfunction	MCESD received letter from Rexam documenting oxidizer malfunction on 9-18-2000.
5-22-2001	Oxidizer malfunction	MCESD received notification documenting oxidizer malfunction on 5-18-2001 and 5-19-2001.
5-30-2001	NOV (#SD-05-30-01-01)	NOV - Processing cans in Lines 2 & 3 inside spray ovens without oven exhaust ducting in its entirety to the catalytic oxidizer. During oxidizer malfunction on 5-18 and 5-19, Rexam continued to process cans through Lines 2 & 3 inside spray oven. This is in violation of Permit Condition I.E (10-1-1992). As a result of NOV, Rexam established a procedure for shutting down Lines 2 & 3 immediately if the oxidizer is not operating.
12-11-2001	2 CSNs	1. CSN #SD-01-03-02-01: Failure to post operating instructions at a solvent degreaser. To address non-compliance with Rule 331 §303.1f, Rexam must ensure that no porous materials are placed in or on a solvent degreaser containing VOC solvent. Re-inspection conducted on 1-28-2002 showed that the required operating instructions were posted. 2. CSN #SD-01-03-02-02: Porous materials observed in solvent degreaser. To address non-compliance with Rule 331 §302.2, Rexam must post operating instructions, per rule requirements, at any VOC solvent-containing degreaser. Porous materials were removed from degreaser at the time of discovery. No porous materials were observed in the solvent degreasers during re-inspection conducted on 1-28-2002. • It was also recommended that Rexam ensure all cans containing waste solvent or solvent-soaked rags have lids that close completely over the can (Rule 330 §306.1; Rule 331 §301.1a; Rule 336 §304.2).
1-21-2003	1 NOV 1 CSN 1 follow-up item requested	1. NOV #SD-02-19-03-01: Porous materials (cloth rag) observed within VOC solvent degreaser. To address the NOV for non-compliance with Rule 331 §303.1f., Rexam must ensure that no porous materials are placed in or on a solvent degreaser containing VOC solvents. Please note this is the second violation of the same standard in as many inspections, resulting in the issuance of a NOV instead of a CSN. 2. CSN #SD-02-19-03-01: Failure to store VOC-containing material used for cleaning in a container which is closed when not in use. To address the non-compliance with Rule 336 §304.1, Rexam must ensure all containers containing VOC materials used for cleanup are kept covered except when placing or removing items into or out of the container. • Per Rule 336 §501.1c(2), Rexam is requested to submit documentation stating the type (name) and VOC vapor pressure (mm Hg at 68^{o}F) of the solvent used to clean the equipment for spray application of inside spray, overvarnish and undervarnish, if other than glycol ether. Submit this documentation within five business days of receipt of this report.

4. EMISSIONS:

Rexam provided calculations of emissions in the Title V permit application. VOC emissions from can coating and solvent cleaning operations were based on mass balance. Emissions from the combustion of natural gas were based on emission factors obtained from AP-42, Tables 1.4-1 and 1.4-2. MCESD reviewed the submitted calculations and requested Rexam to make minor revisions to the calculations and provide supporting Material Safety Data Sheets (MSDS). Based on review of the MSDSs and the revised calculations, MCESD made minor corrections to the calculations. Corrected emissions calculations are provided in Appendix A of this technical support document and a are discussed in further detail below. Table 4.1 provides a summary of potential emissions from Rexam's Phoenix facility, along with actual 2002 emissions, as reported to MCESD. The remainder of this section discusses emission calculations in more detail.

Table 4.1 - Emissions Summary

Pollutant	Maximum Potential Emissions (tpy)		Actual 2002 Report Emissions (tpy)
	Uncontrolled	Controlled	
VOC	282	171	116
NOx	17.4	17.4	5.1
CO	14.6	14.6	4.3
PM	3.5	3.5	0.4
SOx	0.10	0.10	0.03
Total HAPs	142.5	91.3	NR
Select Single HAP:			
Glycol Ether	142.2	90.9	NR
Formaldehyde	0.02	0.02	NR
Chromium Compounds	0.02	0.02	NR
Hydrofluoric Acid	0.01	0.01	NR
Hexane	0.31	0.31	NR

Notes:
NR = Not Reported

4.1. Volatile Organic Compounds:

Potential VOC emissions from can coating and solvent cleaning operations were based on mass balance. The maximum usage of VOC-containing material was determined by multiplying the actual coating usage for 2001 by the ratio of maximum annual can production to actual can production for 2001. Various assumptions were made regarding the percentage of VOC emissions associated with a particular process and where in that process the VOCs were emitted. A discussion of these assumptions and minor corrections made by MCESD follows.

4.1.1. Printer and Printer Ovens:

Just prior to the printer ovens, ink and varnish are applied to the exterior of the can. The cans are then transferred to the printer oven, which dries the coatings. Neither the printers nor the ovens employ an emissions control device to reduce VOC emissions. For emission calculation purposes, it was assumed that 100% of the VOC from the ink and varnish coating are emitted to the atmosphere. However, Rexam did assume that 10% of these VOC emissions were emitted through the printer vents and 90% were emitted in the printer ovens. As of the date of permit issuance, MCESD has neither approved nor denied Rexam's claim regarding the allocation of these VOC emissions because regardless of where these emission occur, 100% of the VOC in the inks and varnish are considered to

have been emitted to the atmosphere.

In the updated permit application (received by MCESD on November 15, 2002) and the revisions to the updated permit application (received by MCESD on March 6, 2003), Rexam specified a glycol ether content for varnishes CC3625XLV and CC3655 of 3.50% by weight and 5.00% by weight, respectively. Based on the MSDSs provided with the revised updated permit application, MCESD corrected the glycol ether content for varnishes CC3625XLV and CC3655 to 7.2% by weight and 10.7% by weight, respectively. This resulted in an increase in the potential glycol ether emissions of approximately 20 tons per year.

4.1.2. Inside Spray Machines and Inside Bake Ovens:
The inside spray machines apply a VOC-containing coating to the interior of the can. The can is then transferred to the inside bake ovens (IBO) for curing. For Production Lines 2 and 3, Rexam assumed that 13% of the VOCs within the inside spray coatings are emitted in the vicinity of the inside spray machines (i.e., on the trackwork) prior to entering the IBOs. This assumption was based on an 87% capture efficiency that was demonstrated in the most recent approved performance test conducted on February 5, 1992. Capture efficiency was determined starting from the inside spray machines (calculated VOC usage value) to the inlet to the catalytic oxidizer (measured concentration). The 13% of the VOCs emitted in the vicinity of the inside spray machines are uncontrolled emissions. The exhaust from the IBOs from Production Lines 2 and 3 are vented to a catalytic oxidizer. The overall VOC reduction efficiency of the control system determined from the 1992 test was 83%. For conservative purposes, Rexam assumed an 80% overall VOC reduction in their emission calculations. VOC emissions from the inside spray machine and IBO from Production Line 1 are uncontrolled. Therefore, 100% of the VOCs from Production Line 1 are considered to be emitted to the atmosphere.

4.1.3. Oil Mist Collection System:
Two oil mist collection systems, with a capacity of 10,200 CFM each, will collect and filter very small oil mist particulate matter emitted from the 18 can body makers. According the manufacturer, the filters are designed to remove 95-98% of all particles larger than 0.3 microns. The filtered air from each oil mist collection system is discharged to the atmosphere through roof stacks. The oil mist that is discharged to the atmosphere contains VOC. Estimated VOC emissions from the oil mist collection system were not provided in the Title V permit application because the collection system was installed subsequent to submittal of the application. However, Rexam conducted particulate matter testing of the oil mist collection system. This testing showed a mass particulate emission rate of 0.061 lbs./hr.

According to the MSDS, the oil coolant contains 6.5% VOC. According to Rexam, the oil coolant is mixed with water to make a 2.5% coolant/water mixture.

Assuming the mass particulate emission rate of 0.061 lbs./hr measured during testing is comprised of 100% oil coolant (i.e., no water), the estimated VOC emissions would be as follows:

VOC = 0.061 lbs. coolant/hr x 0.065 lbs. VOC/ lb. coolant
= 0.004 lbs. VOC/hr (35 lbs. VOC/yr -- based on 8,760 hrs.)

This estimate is conservative since the collected mist emitted to the atmosphere will likely

contain some water. MCESD has determined that VOC emission from the oil mist collection system are negligible and do not require destruction to comply with RACT requirements.

4.1.4. Fuel Combustion:
A small percentage of Rexam's VOC emissions come from the combustion of natural gas. Potential VOC emissions from fuel combustion were based on emission factors obtain from AP-42, Table 1.4-2 and the maximum heat input rating of each piece of equipment capable of combusting natural gas. For determining the maximum potential emissions, Rexam assumed the equipment operated 8,760 hours per year.

4.2. Hazardous Air Pollutants (HAPs):

4.2.1. Coating Operations:
HAPs are primarily emitted during coating operations. Glycol ether makes up over 99% of all HAPs emitted from Rexam's Phoenix facility. Potential HAP emissions were based on a mass balance, similar to the way VOC emissions were determined.

As discussed in Section 4.1.1, the most recent version of the permit application provided by Rexam specified a glycol ether content for varnishes CC3625XLV and CC3655 of 3.50% by weight and 5.00% by weight, respectively. Based on the MSDSs provided with the revised updated permit application, MCESD corrected the glycol ether content for varnishes CC3625XLV and CC3655 to 7.2% by weight and 10.7% by weight, respectively. This resulted in an increase in the potential glycol ether emissions of approximately 20 tons per year.

4.2.2. Washer:
The wash solution used to wash the cans contains a dilute concentration of hydrofluoric acid (HF). Potential emissions of HF were based on an emission factor of 1 pound of HF emitted per 1,000 pounds of HF used. This emission factor was obtained from test results from the washer exhaust from a similar Rexam can manufacturing facility. The results for the testing were provided by Rexam in the revised updated permit application, received by MCESD on March 6, 2003. The results showed an average HF emission rate of 0.2401 x 10^{-3} pound per hour. Based on Ridoline usage during the test, Rexam estimated that 0.22 pound of HF is emitted per 1,000 pounds of HF used. For conservative purposes, Rexam assumed an HF emission factor of 1 pound of HF per 1,000 pounds of HF used.

4.2.3. Fuel Combustion:
A small percentage of Rexam's HAP emissions come from the combustion of natural gas. Potential HAP emissions from fuel combustion were based on emission factors obtain from AP-42, Table 1.4-3 and 1.4-4, and the maximum heat input rating of each piece of equipment capable of combusting natural gas. For determining the maximum potential emissions, Rexam assumed the equipment operated 8,760 hours per year.

4.3. Particulate Matter:
Particulate matter is emitted into the atmosphere from the inside spray coating operations, and from the combustion of natural gas. Various assumptions were made regarding the percentage of particulate matter emissions associated with a particular process. The remainder of this section discusses the particulate matter emission calculations and assumption in more detail.

4.3.1. Inside Spray Coating:

Rexam has three inside spray machines, each having six spray heads. Overspray is captured and vented through roof stacks via overspray sleeves that are attached to each spray head. Rexam assumed that 6% of the inside spray coating ends up as overspray. Of the 6% overspray, Rexam assumed that 90% agglomerates on the overspray sleeves, resulting in particulate emissions of 0.6% of the amount of inside spray coating solids used. According to Rexam, these assumptions were based on engineering estimates and process knowledge.

In the most recent revision of the permit application provided by Rexam, it was assumed that the percentage of coating solids was 19% by weight for each inside spray coating used. Based on the MSDSs for these coatings, the solids content is 24.6% and 23.9% for coatings 4020W16M and 4020W20M, respectively. MCESD corrected Rexam's calculations using the values from the MSDSs. This resulted in an increase in particulate matter emissions of approximately one half ton per year.

4.3.2. Oil Mist Collection System:
As discussed in Section 4.1.3, Rexam uses an oil mist collection system to collect fine oil mist from the can body maker operations. The filtered air from each oil mist collection system is discharged to the atmosphere through roof stacks. Estimated particulate matter emissions from the oil mist collection system were not provided in the Title V permit application because the collection system was installed subsequent to submittal of the application. However, Rexam conducted particulate matter testing of the oil mist collection system. This testing showed a mass particulate emission rate of 0.061 lbs./hr, and an outlet concentration of 0.0012 gr/dscf.

4.3.3. Fuel Combustion:
Potential particulate matter emissions from the combustion of natural gas were based on an emission factor obtain from AP-42, Table 1.4-2 and the maximum heat input rating of each piece of equipment capable of combusting natural gas. For determining the maximum potential emissions, Rexam assumed the equipment operated 8,760 hours per year.

5. APPLICABLE REQUIREMENTS:

As a major source for VOCs and HAPs, Rexam is required to obtain a Title V permit. The permit application submitted by Rexam lists applicable requirements and contains compliance information, as well as a certification of compliance, which are all required as part of a Title V permit application.

Rexam is legally responsible for complying with all applicable requirements of the Title V permit as well as other applicable requirements that may not be specified in the Title V permit. Some requirements are locally enforceable only. This is because only rules approved by EPA through Sections 110, 111, and 112 of the federal Clean Air Act are federally enforceable and either MCESD has not submitted the regulation to the EPA or the EPA has not approved a submitted regulation. Some of the applicable requirements contain terms for monitoring, maintenance and record keeping that require detailed explanation in this Technical Support Document. The specific conditions are listed below, along with any necessary explanations in monitoring, maintenance and record keeping requirements.

5.1. Maricopa County Rule 210 – Title V Permit Provisions:

5.1.1. Applicable Requirements:
Rule 210 §302.1b requires permits to include enforceable emission limitation and standards

including those operation requirements and limitations that assure compliance with all applicable requirements at the time of issuance. Installation permits that precede the Title V permit contain conditions such as emission limits and operating limitations or requirements that were established to avoid classification as a NSR major source or major modification. Such permit conditions are federally enforceable conditions that are still applicable at the time of issuance of the Title V permit, and are therefore required to carryover to the Title V permit conditions in accordance with Rule 210 §302.1b.

Applicable installation permit conditions that carryover to the Title V permit include the following:

5.1.1.1. Permit Condition 18.C.1 - *The Permittee shall limit emissions of VOC from the entire facility to no more than 142 tons per any 12-month rolling period.*

Construction of the original facility began in 1976 and production began in January, 1977. Maricopa County was not declared "nonattainment" for ozone until March 3, 1978. In addition, the NSR provisions under the 1977 amendments to the federal Clean Air Act were adopted in August, 1977. Therefore, since American National Can Company was located in an attainment area at the time construction commenced and construction of the facility predates NSR regulations, the original operations were not subject to NSR. Also, the PSD regulations in place at that time pertained only to total suspended particulate matter and sulfur oxides. Therefore, a VOC emission limit in the original permit did not exist.

On July 7, 1989, American National Can Company (now Rexam Beverage Can Company) applied for a facility modification consisting of the addition of a 3rd production line and a catalytic oxidizer, which would control VOC emissions from the inside spray ovens from Production Lines 2 and 3. On September 13, 1989, Maricopa County approved the installation of the 3rd production line and issued permit conditions which required testing of the catalytic oxidizer. To avoid classification as a major modification that would be subject to NSR requirements, American National Can Company accepted a facility-wide VOC emission limit of 143 tons per any 12-month period. This limit was determined by establishing a baseline emissions rate of 103 tons per year and limiting emissions from the modification to less than 40 tons per year. This baseline was based on 1986 emissions data from the facility. Based on a file review, it is assumed that 1986 was used as a baseline year due to a previous application for a facility modification submitted in 1987 that was subsequently withdrawn. During processing of this application the baseline was established. It is unclear why the baseline wasn't revised due to the 1989 revision application submitted to Maricopa County. However, based on reported VOC emissions for the 2 years immediately preceding the 1989 revision application submittal, the 103 tons per year baseline emission rate is more conservative with respect to limiting emissions (i.e., VOC emissions for 1987 and 1988 were 111 tons and 134 tons, respectively). The original installation permit conditions limited VOC emission to less than 143 tons per any 12-month period. MCESD has changed this limit to 142 tons per any 12-month period due to inherent uncertainties in estimating emission to such accuracy and to eliminate possible confusion that the limit is 143 tons, instead of less than 143 tons.

5.1.1.2. Permit Condition 19.C.4 - *The Permittee shall not process beverage cans through the inside spray ovens of Production Line 2 nor Production Line 3 unless the exhaust*

from the Line 2 - inside spray oven (FECO Serial No. 15295) and Line 3 – inside spray oven (MOCO Serial No. 6378) is ducted in its entirety to the catalytic oxidizer.

Rexam has requested that this condition not be carried over to the Title V permit. Rexam claims that the level of production at the facility is not always such that the catalytic oxidizer needs to be run in order to meet the annual emission limitation of 142 tpy. Rexam is requesting the option of allowing them to shut down the catalytic oxidizer at times when the production rate is lower or is curtailed. In a letter from Rexam, dated July 27, 1998, Rexam requested the following alternative:

> *"(The Permittee) will operate the Hirt catalytic oxidizer in a manner which shall insure that the permitted VOC emissions limitation of (142 tpy) is met. If the production is curtailed or is at such a rate that VOC emissions will not exceed the permitted limit without operating the catalytic oxidizer, the oxidizer may be taken offline in order to conserve resources."*

When Production Line 3 was added in 1989, Rexam avoided classification of the change as being a major modification by limiting the VOC emissions increase to less than 40 tpy. Since federal NSR applicability was avoided, Rexam was subject to County BACT requirements, pursuant to Rule 210 (Installation Permits) §303 (version adopted July 13, 1988). In addition to being installed to keep the emissions increase to less than 40 tpy, the catalytic oxidizer is also used to meet the County BACT requirements. Controlling emissions from only Production Line 3 was not sufficient to maintain the VOC emissions increase to less than 40 tpy. Therefore, Rexam ducted the exhaust from inside bake oven from Line 2 and 3 to the catalytic oxidizer. Since the catalytic oxidizer was required to meet BACT requirements at the time of the facility modification, the Department has denied Rexam's request to process cans through the inside bake ovens of lines 2 and 3 while the catalytic oxidizer is not operating.

5.1.1.3. Permit Condition 19.C.5 - *The Permittee shall operate the VOC emission control system such that the total VOC emissions from the inside spray coating operations associated with Production Lines 2 and 3 are reduced by at least 81% by weight.*

As mentioned in Section 5.1.1.2, the installation of Production Line 3 was subject to BACT requirements pursuant to Rule 210 §303 (version adopted July 13, 1988), which are currently required by Rule 241 §301. Based on a file review, it appears that Maricopa County never clearly stated what level of control was considered BACT at the time of the modification. However, it was recognized by Maricopa County and American National Can Company that in order to maintain the VOC emissions increase resulting from the facility modification to less than 40 tons per year, the use of an emissions control device was necessary.

A performance test was conducted in January 1992, which showed an overall VOC reduction efficiency of 83% by weight. In the Test Report submitted by American National Can Company and received by Maricopa County on February 13, 1992, an overall VOC reduction efficiency of 80% was used to demonstrate compliance with the VOC emissions increase limit of 40 tons per year and the facility-wide limit of 143 tons per year, as required in the Installation Permit. Maricopa County notified American National Can Company in a letter dated December 2, 1992, that the results of the performance test conducted in January 1992 were approved.

A typical overall VOC reduction efficiency required to meet RACT is 81%. Since Maricopa County approved the performance test that demonstrated a reduction efficiency of 83% and BACT cannot be less stringent that RACT, the Department is requiring Rexam to operate the VOC emissions control system such that it will reduce VOC emissions from the inside spray coating operations by at least 81% by weight.

5.1.1.4. Permit Condition 19.C.6 - *The inlet temperature of the catalytic oxidizer shall be a minimum of 800°F whenever Line 2 – inside spray oven 2 (FECO Serial No. 15295) or Line 3 – inside spray oven 3 (MOCO Serial No. 6378) is in use. The Permittee may operate the catalytic oxidizer at an inlet temperature less than 800°F if it can be demonstrated through testing that the required reduction efficiency can be achieved at such lower temperature.*

Based on a file review, it is assumed that this permit condition was required to ensure that the catalytic oxidizer will be operated at a temperature at which VOC destruction occurs. This condition will carryover to the Title V permit.

5.1.1.5. Permit Condition 19.D – *The Permittee shall only use natural gas as fuel for boilers and heaters.*

Since emissions from fuel combustion operations were determined based on the use of natural gas, Rexam shall is limited to using only natural gas for fuel combustion activities. A change in fuel type would require an permit revision application pursuant to Rule 210 §405.1f.

5.1.1.6. Permit Condition 19.E.1 – *The Permittee shall operate the oil mist collection system at a control efficiency of at least 95%, or such that the outlet concentration of particulate matter in the exhaust stream from the oil mist collection system does not exceed 0.015 gr/dscf, corrected to 6% oxygen.*

As part of the minor permit revision associated with the installation of the oil mist collection system, Rexam was required to operate the system at a particulate matter control efficiency of at least 95% in order to meet RACT requirements. This was to be demonstrated through testing. During testing the average efficiency measured was only 52.1%. However, according to a letter from Mr. Marc Vanderwal (Rexam – Quality Manager) dated September 15, 2003, the measured inlet and outlet mass loading rates were too low to accurately determine a 95% removal efficiency. According to the test report received by the Department, the mass outlet emissions were near the detection limit of the method.

Based on discussions with the Department's Air Quality Technical Services Unit, it is believed that the inlet and outlet mass loading rates were too low to accurately measure a removal efficiency and a 95% particulate removal efficiency would be achieved at a higher mass loading rate. Therefore, since the permit conditions associated with the minor permit revision did not address a low particulate mass loading rate, the Department has included the provision that the outlet concentration of particulate matter in the exhaust stream from the oil mist collection system not exceed 0.015 gr/dscf. This value for the outlet concentration was also required in a permit issued to Rexam by the Bay Area Air Quality Management District (BAAQMD) for a

similar oil mist collection system, pursuant to BAAQMD Rule 6-310. Therefore, MCESD has accepted this limit as meeting RACT requirements for the oil mist collection system.

5.1.1.7. Permit Condition 20.D.4 - *On an annual basis, the Permittee shall send a section of the catalyst bed to the supplier or manufacturer for testing. If the supplier/manufacturer determines that the catalyst bed requires cleaning or reactivation, the Permittee shall have the catalyst bed cleaned or reactivated. The Permittee shall maintain documents from the manufacturer/supplier indicating results of catalyst testing, cleaning, and or reactivation.*

Another condition that was required in the Installation permit was the requirement for Rexam to maintain the temperature rise across the catalyst bed to no less than 20°F, averaged over any 30 minutes of operation. Rexam has requested that this condition not carryover to the Title V permit. Rexam claims that the 20°F temperature rise across the catalyst bed cannot always be maintained due to the low VOC content of the coating materials and varying production rates resulting in varying solvent loading. In the cover letter to the updated Title V Permit Application, dated November 11, 2002, Rexam stated the following:

> *"During a compliance demonstration, the minimum temperature rise is established based on a maximum VOC load condition. Due to the exothermic nature of the catalytic reaction, the higher the VOC load and destruction, the higher the temperature rise. Rexam maintains that, during typical operations (i.e., lower VOC loading), the catalyst, even at compliant destruction efficiency levels, does not emit as much heat and, therefore, a lower temperature rise is experienced."*

On an annual basis, Rexam has the catalyst tested to determine if the catalyst requires reactivation or cleaning. In a letter from American National Can Company dated July 27, 1998, the following alternative requirement was proposed:

> *"To insure optimal catalyst performance, the (Permittee) will provide verification of catalyst performance by documenting a minimum inlet temperature of 800^{o}F and by sending a section of the catalyst bed to the supplier for testing to determine catalyst reactivity. If required, the entire catalyst will be reactivated or replaced to maintain required efficiency. As an alternate, if the catalyst supplier states that the catalyst requires a higher than 800 ^{o}F temperature to maintain 90% destruction efficiency, (the Permittee) would have the option of replacing the catalyst or operating the oxidizer at that higher temperature to maintain 90% destruction efficiency."*

The Department has granted Rexam's request to not include the requirement for the minimum temperature rise of 20^{o}F in the Title V permit. In its place, the Department will require that the catalyst bed be sent to the supplier or manufacturer on an annual basis for cleaning or reactivation, if the supplier or manufacturer determines such action is necessary based on testing of a section of the catalyst bed. At this time the Department has not approved the alternative of operating at a higher temperature determined by the catalyst supplier since performance testing would be necessary to demonstrate alternate methods of

compliance. It should also be noted that if 87% of VOC emissions are captured and an 81% overall VOC reduction efficiency is required, the corresponding destruction efficiency of the control device would be 93%, not 90%.

5.1.2. Compliance Monitoring:

To monitor for compliance with the VOC emission limit required under Permit Condition 18.C.1, Rexam will be required to calculate the rolling 12-month total facility-wide VOC emissions on a monthly basis. In addition, if the 12-month rolling total facility-wide VOC emissions is equal to 80% or more of the 142-ton limit, Rexam will be required to calculate the 12-month rolling total VOC emissions on a weekly basis. Doing weekly VOC emissions calculations will provide emissions for 11 full months and a portion of the 12th month. This will allow Rexam to determine the amount of VOC that can be emitted during the remainder of the month without exceeding the 142-ton limit. These requirements are specified in Permit Condition 20.D.3. Also, Permit Condition 21.A.4, will require Rexam to submit the calculations to the Department in the semiannual compliance monitoring report.

5.1.2.1. To monitor for compliance with the requirement that beverage cans not be processed through the inside spray ovens associated with Production Lines 2 and 3 if the exhaust from these inside spray ovens is not vented to the catalytic oxidizer (Permit Condition 19.C.4), Rexam will be required to maintain records, pursuant to Permit Condition 20.D.4, indicating the date and times when the catalytic oxidizer was not operating, along with records indicating whether or not beverage cans were being processed through the inside spray ovens of Production Lines 2 and 3. In accordance with Permit Condition 21.A.4, Rexam will be required to submit a summary of these records to the Department in the semiannual compliance monitoring report, indicating the dates and times when the catalytic oxidizer was not operating, along with records indicating whether or not beverage cans were being processed through the inside spray ovens of Production Lines 2 and 3. The Department will be able to compare these records to verify that beverage cans were not being processed through the inside spray ovens of lines 2 and 3 when the catalytic oxidizer was not operating.

5.1.2.2. To monitor for compliance with the requirement that Rexam reduce VOC emissions from the inside spray coating operations of Line 2 and 3 by at 81% by weight (Permit Condition 19.C.5), Rexam will be required to conduct a performance test on the catalytic oxidizer. Testing conditions are specified under Permit Condition 22.A. Testing is required to determine the VOC destruction efficiency of the catalytic oxidizer and the VOC capture efficiency of the catalytic oxidizer. Capture efficiency is to be determined with respect to the VOC emissions from the inside spray coating operations associated with Production Lines 2 and 3, including the inside spray machines, flashoff areas, and the inside spray ovens. Testing shall verify that the Permittee is capable of operating the VOC emission control system at an overall VOC reduction efficiency of at least 81%, as required in Permit Condition 19.C.5.

In catalytic oxidizers the destruction efficiency will vary depending on the VOC loading into the system. Rexam's catalytic oxidizer is designed to handle flow from the inside spray ovens from lines 2 and 3. If one of these production lines is not operating, the oxidizer will be receiving a significantly lower flow rate than

normal. The lower flow rate will result in a lower VOC loading, where it may be difficult for the catalytic oxidizer to achieve the destruction efficiency necessary to maintain an overall VOC reduction efficiency of 81% by weight. To ensure that the catalytic oxidizer is capable of achieving the required VOC reduction efficiency under the possible scenario of either Production Line 2 or 3 not being in operation, Rexam will be required to conduct testing under two different operating scenarios. Testing is to occur while Production Line 3 is operating and the exhaust from the inside spray oven from only Line 3 is being ducted to the catalytic oxidizer. In addition, testing is to occur while Production Lines 2 and 3 are operating and exhaust from the inside spray ovens from both lines 2 and 3 is being ducted to the catalytic oxidizer.

5.1.2.3. To monitor for compliance with Permit Condition 19.C.6, Rexam will be required to continuously record the inlet temperature of the catalytic oxidizer. This requirement is specified in Permit Condition 20.D.4a.

5.1.2.4. Rexam's fuel burning equipment is currently designed to operate on only natural gas; therefore, additional recordkeeping is not required to monitor for compliance with Permit Condition 19.D. However, in accordance with Rule 210 §405.1f, Rexam is required to submit an application for a permit revision prior to a change in the fuel type. This requirement is included in Permit Condition 21.5.

5.1.2.5. Rexam conducted a performance test on the oil mist collection system and measured an average particulate matter outlet concentration 0.0012 gr/dscf, which is less than 10% of the required concentration of 0.015 gr/dscf pursuant to Permit Condition 19.E.1. Therefore, no additional testing requirements related to the oil mist collection system are included in this permit. However, to monitor for compliance with the requirements of Permit Condition 19.E.1, Rexam will be required to maintain and calibrate a pressure differential monitoring gauge on each oil mist collection system. The pressure differential gauges are to monitor the pressure differential across the final filter of the two-stage filtering system. The pressure differential across the final filter of each system shall be either between 1.0 and 5.0 inches of water, or within the operating limits specified in the most recently approved O&M Plan (if revised in the future).

5.1.2.6. Permit Condition 20.D.4e requires Rexam to have the catalyst bed reactivated, cleaned, or replaced, if necessary, on an annual basis. To monitor for compliance with this requirement, Permit Condition 20.D.4 also requires Rexam to keep a permanent record in a maintenance log of the maintenance actions taken on the catalytic oxidizer within 24 hours of completion of the action. In addition, Permit Condition 21.A.4f requires Rexam to submit a copy of the maintenance log for the catalytic oxidizer and documentation from the catalyst supplier/manufacturer regarding testing, cleaning, and/or reactivation of the catalyst bed, to the Department in the semiannual compliance monitoring report.

5.2. Maricopa County Rule 300 and Arizona SIP Rule 30 – Opacity Regulations:

5.2.1. Applicable Requirements:
Requirements for visible emissions are established in County Rule 300 and SIP Rule 30. County Rule 300 is locally enforceable only and requires opacity to be 20% or less. SIP

Rule 30 is federally enforceable and requires opacity to be 40% or less. Opacity limits are contained in Permit Condition 18.A.

5.2.2. Compliance Monitoring:
The emission units located at Rexam are unlikely to generate visible emissions. MCESD has inspected Rexam's facility on a regular basis since 1983 and has not observed visible emissions during any of these inspections. Therefore, MCESD has determined that weekly monitoring is adequate to monitor for compliance with the applicable opacity requirements.

In accordance with Permit Condition 20.A, Rexam will be required to conduct weekly monitoring to observe visible emissions from any device capable of emitting any air contaminant other than uncombined water. If visible emissions are observed from any device capable of emitting any air contaminant other than uncombined water, Rexam is required to obtain an opacity reading conducted in accordance with EPA Reference Method 9 by a certified visible emissions (VE) reader. This reading is to be taken within 1 or 3 days following the initial observation (depending on whether a compliance status notification or notice of violation for exceeding opacity limits had been issued to Rexam in the prior 12 months). Follow-up opacity readings are required each day that the unit is in operation for a minimum of 14 days. If the opacity did not exceed 20% during any 14 consecutive daily opacity readings, the opacity monitoring schedule may change to weekly. If, during weekly opacity monitoring, the opacity exceeds 20%, the schedule is to revert to daily. Regardless of the applicable schedule, Method 9 opacity monitoring may cease if the measured opacity is 0% for all readings obtained during a single Method 9 monitoring event.

In accordance with Permit Conditions 21.A.1, Rexam will be required to file semiannual monitoring reports with the MCESD. The monitoring report is to contain such information as dates on which visible emissions observations were taken; name of the observer; whether or not visible emissions were present; the opacity of visual emissions determined by a Method 9 reading, if applicable; and a description of any corrective actions taken, including date taken, and any other relevant information.

5.3. SIP Rule 31 and 311 – Particulate Matter from Process Industries:

5.3.1. Applicable Requirements:
SIP Rule 311 §304 and SIP Rule 31 §H include particulate matter limitations for fuel burning operations that are applicable to Rexam's facility. An equation to calculate maximum allowable PM emissions is provided in Permit Condition 18.D (Rule 311 §304.1) for equipment with a heat input rating of 4,200 MMBtu/hr or less.

5.3.2. Compliance Monitoring:
The total predicted PM emissions from all natural gas fuel burning equipment, using an emission factor obtained from AP-42, Table 1.4-2, is 0.30 pounds per hour. The allowable PM emissions for the largest fuel burning equipment alone, using the equation specified in Rule 311 §304, is 5.5 pounds per hour. Since the predicted particulate matter emissions using the AP-42 emission factor is significantly less than the emission limit required pursuant to Permit Condition 18.D Rexam will only be required to monitor visible emissions from the facility on a weekly basis.

Predicted PM Emissions
AP-42 PM emission factor = 7.6 lbs/ $MMft^3$ nat. gas
Total heat input capacity of all natural gas fuel buring equipment = 41.7 MMbtu/hr

Predicted PM emissions = (41.7 MMBtu/hr) (7.6 lbs PM / $MMft^3$ nat. gas) ÷ (1,050 (MMBtu nat. gas/ $MMft^3$)

= 0.30 lbs. PM / hr

Allowable PM Emissions

$E_1 = 1.02Q^{0.769}$
$E_1 = 1.02(9.0)^{0.769}$
E_1 = 5.5 lbs. PM / hr

5.4. Maricopa County Rule 315 and SIP Rule 34 §E – Spray Coating Operations:

5.4.1. Applicable Requirements:
Maricopa County Rule 315 §301.1 and SIP Rule 34 §E.1 requires spray painting operations to be conducted in an enclosed area designed to contain at least 96% by weight of the overspray. Spray is to be directed into the enclosure so that overspray is directed away from any opening in the enclosure. No spraying is to be conducted within three feet of any open end and/or within two feet of any open top of the enclosure.

Maricopa County Rule 315 §301.2 requires any spray booth or enclosure with forced air exhaust to operate with an average overspray removal efficiency of at least 92% by weight. No gaps, sags or holes are to be present in the filters and all exhaust must be discharged into the atmosphere.

Rule 315 §302.4 provides an exemption from the requirements indicated above if the enclosures, spray booths and exhaust are located entirely in a completely enclosed building, providing that any vents or openings do not allow overspray to be emitted into the outside air.

At Rexam's facility the application of varnish is sprayed onto the cans at the can printing station. Overspray is not vented to the outside air and this operation is located within Rexam's enclosed building. Therefore, overspray from the application of overvarnish is not subject to the requirements of Rule 315 §301.2 (i.e., average overspray removal efficiency of at least 92% by weight; no gaps, sags or holes are to be present in the filters; and all exhaust must be discharged into the atmosphere). However, SIP Rule 34 §E does not provide the same exemption. Therefore, overvarnish application activities are subject to the requirements of SIP Rule 34 §E.1 (i.e., enclosed area designed to contain at least 96% by weight of the overspray).

The inside spray machines apply a coating to the inside of the cans. The overspray from this operation is vented to the outside air. Therefore, this operation is subject to the requirements of Rule 315 §§ 301.1 and 301.2, along with SIP Rule 34 §E.1.

These requirements are included in Permit Condition 19.C.1 and 19.C.2.

5.4.2. Compliance Monitoring:
The inside spray system is an automated system. The spray nozzles are surrounded by the overspray sleeves, where the spray is directed to the inside of the can. Furthermore, the spray coating operations are conducted with Rexam's enclosed building. Therefore, Rexam will not be subject to additional monitoring requirements to monitor compliance

with Permit Condition 19.C.1 (i.e., County Rule 315 §301.1 and SIP Rule 34 §E.1).

Rexam is currently not in compliance with the overspray removal efficiency requirement of at least 92% by weight pursuant to Rule 315 §301.2. MCESD received a Compliance Plan from Rexam on August 22, 2003, describing the steps that Rexam will take in order to achieve compliance with the requirement. Some of these action items and schedule have been included in Permit Condition 23. Since most of these dates are dependent on the approval of a Significant Modification that has been submitted to this Department, the final completion date is a function of the approval date. The final completion date is an enforceable permit condition. The estimated target date located in the first column of the compliance plan is only an estimate and is not an enforceable condition. This was added to provide more of a structure to the schedule. Rexam will also be required to submit a monthly certified progress reports to MCESD indicating the dates when the milestones specified in Permit Condition 23 were achieved; and an explanation of why any dates in the schedule of compliance were not or will not be met, any preventive or corrective measures adopted.

To monitor for compliance with the remainder of Permit Condition 19.C.2 (County Rule 315 §301.2 -- no gaps, sags or holes are to be present in the filters; and all exhaust must be discharged into the atmosphere), Rexam will be required to conduct an inspection of the overspray sleeves on a weekly basis, in accordance with Permit Condition 20.D.6. This information will be submitted to the Department in the semiannual compliance monitoring report, as required under Permit Condition 21.A.4h.

5.5. Maricopa County Rule 320 and Arizona SIP Rule 32 – Odorous and Gaseous Air Contaminants:

5.5.1. Applicable Requirements:
County Rule 320 and SIP Rule 32 prohibit the emissions of gaseous and odorous air contaminants in such quantities and concentrations that cause air pollution. Emissions of sulfur oxides are not to result in ground level SO_2 concentrations at any place beyond the premises of Rexam's facility that exceed the SO_2 limits specified in SIP Rule 32 §F. This requirement is included in Permit Condition 18.B. Other applicable requirements related to material containment are included in Permit Condition 19.A.

5.5.2. Compliance Monitoring:
The emission units located at Rexam's facility are unlikely to cause odor problems. MCESD has inspected Rexam's facility on a regular basis since 1983 and has not detected the emissions of odorous air contaminants during any of these inspections, nor has MCESD received any odor complaints regarding Rexam.

The fuel burning equipment located at Rexam's facility combusts natural gas. Air dispersion modeling was conducted using Screen3 software to determine compliance with the sulfur dioxide concentration limits. The mass emission rate of sulfur dioxide was obtained from Rexam's combustion emissions calculations. These calculations use an SOx emission factor of 0.6 lb SOx / 10^6 scf natural gas. Based on this emissions factor and the rated heat input capacity of all natural gas combustion equipment at Rexam's facility, a maximum potential SO_2 emissions rate of 0.0238 lb/hr ($\approx$ 0.003 grams/second) was estimated. This emission rate was used for dispersion modeling purposes. In addition, it was assumed that all SO_2 emissions from natural gas combustion were emitted from the catalytic oxidizer because the catalytic oxidizer is the piece of

equipment with the largest maximum heat input rating. Therefore, the stack configuration of the catalytic oxidizer was used for dispersion modeling purposes.

Screen modeling results show the maximum 1-hr concentration of SO_2 of 1.3 $\mu g/m^3$ occurs at a distance of 100 meters from the stack. The 24-hr and 72-hr concentrations would be less than 1.3 $\mu g/m^3$. Dispersion modeling shows that it is highly unlikely that emissions from Rexam will result in ground level concentrations of SO_2 beyond the premises of Rexam's facility that exceed the limits specified SIP Rule 32 §F.

Since facility inspections conducted by MCESD have shown no odor problems and dispersion modeling has shown that is unlikely that emissions will result in SO_2 concentrations exceeding the applicable standards, MCESD has determined that requiring Rexam to maintain an odor complaint log is adequate to monitor for compliance with the applicable H_2S and SO_2 emission limits. The complaint log is to contain a description of the complaint, date, time of the complaint and other relevant information and submit a copy of this log with the semi-annual monitoring report.

5.6. Maricopa County Rule 331 and SIP Rule 331 – Solvent Cleaning:

5.6.1. Applicable Requirements:
County Rule 331 and SIP Rule 331 are identical. Both rules regulate solvent cleaning operations and include such requirements as solvent specifications, degreaser operating requirements, and solvent handling and disposal. SIP Rule 34 §§ B and C and SIP Rule 331 both pertain to solvent degreasers. SIP Rule 331 is more stringent and more recently incorporated into the SIP than SIP Rule 34. Therefore, SIP Rule 331 was used for Rexam's solvent cleaning operations. However, SIP Rule 34 was also cited.

Rule 331 §304.1 requires vapor cleaning machines to use a cleaning solvent having a total VOC vapor pressure of 1 mm Hg at 20 °C. This requirement was included in Permit Condition 19.B.1.

Rule 331 §301 contains solvent handling requirements that require Rexam to keep solvent soaked materials in closed leakfree containers that are to be opened only when adding or removing material, and to cleanup any solvent the spills from the container. These requirements are included in Permit Condition 19.B.2.

Equipment requirements for cleaning machines pursuant to Rule 331 §§302 and 305 are included in Permit Condition 19.B.3. These requirements include providing a leakfree container; properly maintaining and operating equipment; specific equipment requirements for cleaning machines with an internal reservoir (e.g. internal drainage rack, impervious cover, freeboard height not less than 6 inches, markings indicating the maximum solvent level allowable which conforms to the applicable free board height); and specific equipment requirements for degreaser that heat or agitate the solvent.

Operating requirements for cleaning machines pursuant to Rule 331 §303 are included in Permit Condition 19.B.4. These requirements pertain to fans, covers, draining, spraying, agitation, porous material, vent rates, hoist speed, contamination prevention, and signage requirements.

5.6.2. Compliance Monitoring:

To monitor for compliance with the VOC vapor pressure requirement pursuant to Permit Condition 19.B.1, Rexam will be required to keep the written value of the total VOC vapor-pressure of each cleaning solvent in accordance with Permit Condition 20.C.3

To monitor for compliance with the solvent handling, equipment, and operating requirements indicated in Section 5.6.1, Permit Condition 20.C.1 will require Rexam to inspect the solvent cleaning operations on a weekly basis. Rexam will be required to maintain a checklist for the weekly inspections, indicating the date the inspection occurred, the name of the inspector, the compliance status with respect to each requirement pursuant to Permit Conditions 19.B, and any corrective action taken.

Rexam will also be required to maintain solvent usage records, which will enable Rexam to calculate VOC emissions from solvent cleaning operations. The results of these calculations will be used, along with other VOC emission calculations, to monitor for compliance with the facility-wide VOC emissions limit of 142 tons per year, as specified in Permit Condition 18.C.1.

In accordance with Permit Condition 21.A.3, a summary of the records associated with these monitoring requirements will be required to be submitted to the Department in the semiannual compliance monitoring reports. Rexam will be required to report the amount of solvent used each month and will be required to include records of each instance of noncompliance discovered during the required weekly inspections

5.7 Maricopa County Rule 336 and SIP Rule 336 – Surface Coating SIP Rule 34 §E.4 – Organic Solvents (VOCs): Other Coating Operations:

5.7.1 Applicable Requirements:
County Rule 336 and SIP Rule 336 are identical rules that regulate surface coating activities. Rexam is subject to surface coating VOC content limitations, surface coating application methods, equipment cleanup requirements, handling and disposal requirements, and various recordkeeping requirements.

Coating Limits (Permit Condition 18.C.2)
Rule 336 §301 and SIP Rule 34 §E.4 specifies VOC-content limits for various surface coating types.

Application Methods (Permit Condition 19.C.3)
Rule 336 §302 requires surface coatings that contain more than 2 lbs. VOC per gallon to be applied via a low pressure spray gun; or an electrostatic system; or a system that atomizes principally by hydraulic pressure, including “airless” and air assisted airless”; or non-atomizing or non-spraying application methods, such as dipping, rolling, or brushing; or any method which is approved by the Administrator of the Federal EPA and the Control Officer as having a transfer efficiency of 65% or greater.

Cleanup of Coating Application Equipment (Permit Condition 19.C.7)
When using VOC-containing material to clean surface coating application equipment, Rule 336 §303.1 requires that the application equipment to be disassembled and cleaned in a container which remains covered at all times, except when the application equipment is being handled in the container, or transferred into or out of the container; or a commercially-sold gun cleaning machine.

Rule 336 §303.2 requires VOC-containing solvents used to clean surface coating application equipment to have a VOC-vapor pressure below 35 mm Hg at 20 °C. Rule 336 §305.6 allows such solvent to have a VOC vapor pressure above 35 mm Hg for sprayless equipment in which the same principal solvent is used for cleaning as is used in the coating.

VOC Handling and Disposal (Permit Condition 19.C.8)
Rule 336 §304 requires each VOC-containing material not in use to be covered. Finishing and cleaning materials are to be stored in closed or covered leak-free containers. In addition, all VOC-containing materials intended for disposal including, but not limited to, rags, waste coatings, waste brushes, waste rollers, waste applicators, waste solvents, and their residues, are to be stored in closed, leakfree containers which are legibly labeled with their contents and which remain covered when not in use.

Recordkeeping (Permit Condition 20.D.1)
Rule 336 §501 requires Rexam to maintain a list of VOC-containing materials. The list is to include the VOC content of the material. Rule 336 §501 also requires that the usage of VOC-containing coatings are to be recorded either daily or monthly, depending on whether the VOC content exceeds the limits specified in Table 1 of Rule 336 §301. MCESD has included a provision for weekly recordkeeping of VOC usage if the 12-month rolling total facility-wide VOC emissions for the most recent 12-month period is at least 80% of the facility-wide limit of 142 tons. In other words, if VOC emissions are greater than or equal to 114 tons during the most recent 12-month period, VOC usage shall be updated weekly. The purpose of this is to have the necessary records in order to perform weekly VOC emission calculations in accordance with Permit Condition 20.D.3.

5.7.2 Compliance Monitoring:

Coating Limits
To monitor for compliance with the coating limits required pursuant to County and SIP Rule 336 §301 and SIP Rule 34 §E.4(a), Rexam will be required to maintain a list of coatings, along with the VOC contents of each coating. This information is to be submitted to the Department in the semiannual compliance monitoring report. These requirements are include in Permit Conditions 20.D.1 and 21.A.4.

Application Methods
For applying surface coatings, Rexam uses a system that atomizes principally by hydraulic pressure. The coating application is an automated process using equipment specified in the permit application. No additional monitoring requirements are necessary to ensure compliance with the requirement of Rule 336 §302.

Cleanup of Coating Application Equipment
To monitor for compliance with the coating application equipment cleanup requirements pursuant to Rule 336 §303 and Permit Condition 19.C.7, Rexam will be required to maintain a hard copy of the VOC vapor pressure at 20°C (68°F) of each solvent used to clean spray guns, hoses, reservoirs, and any other coating application equipment. This monitoring requirement is specified in Permit Condition 20.D.1. A summary of this information is to be submitted to the Department in the semiannual compliance monitoring report.

VOC Handling and Disposal

To monitor for compliance with Rule 336 §304 and Permit Condition 19.C.8, Rexam will be required to conduct a weekly inspection of the facility. The purpose of the inspection is to determine whether all VOC-containing materials intended for disposal, including but not limited to, rags, waste coatings, waste brushes, waste rollers, waste applicators, waste solvents, and their residues, are stored in closed, leakfree containers which are legibly labeled with their contents and which remain covered when not in use. This monitoring requirement is specified in Permit Condition 20.D.5. A summary of this information is to be submitted to the Department in the semiannual compliance monitoring report.

Recordkeeping
To monitor for compliance with the recordkeeping requirements pursuant to Rule 336 §501 and Permit Condition 20.D.1, Rexam will be required to submit a semiannual compliance monitoring report indicating the compliance status with respect to the "current list" required. In addition, the Department will conduct an unannounced facility inspection at least annually, at which time the inspector reviews the required records.

5.8 Maricopa County Rule 360 – New Source Performance Standards
40CFR Part 6, Subpart WW – Standards of Performance for Beverage Can Surface Coating Industry:
Maricopa County has been delegated the authority to enforce Federal Regulations (Part 60, Title 40 of the Code of Federal Regulations) by the U.S. EPA. This enforcement authority is stated in Maricopa County Rule 360. The 40 CFR Part 60 Federal Regulation applicable to Rexam is Subpart WW, which specifies standards of performance for the beverage can surface coating industry.

Provisions of the NSPS, Subpart WW are applicable to each affected facility for which construction, modification, or reconstruction commenced after November 26, 1980. As of the date permit issuance, affected facilities located at Rexam that are subject to the requirements under NSPS, Subpart WW include the Line 2 overvarnish coating operations, Line 3 overvarnish coating operations, and Lines 1, 2, and 3 inside spray coating operations (Lines 1 and 2 inside spray coating operations were modified in 1989, adding a sixth spray head to each line). The applicable requirements indicated in Section 5.8.1 apply only to these operations.

5.8.1 Applicable Requirements:
Pursuant to 40 CFR §§ 60.492(b) and (c) Rexam is required to limit the volume-weighted calendar-month average VOC emissions to 0.46 kilogram of VOC per liter of coating solids from each two-piece can overvarnish coating operation; and 0.89 kilogram of VOC per liter of coating solids from each two-piece can inside spray coating operation. This requirement is included in Permit Condition 18.C.3. The source is using VOC-compliant coatings rather than the catalytic oxidizer to ensure compliance with the requirements of NSPS, Subpart WW.

5.8.2 Compliance Monitoring:
To monitor for compliance with the VOC emission limits specified in Permit Condition 18.C.3, Rexam will be required to conduct a performance test each calendar month for each affected facility. Performance testing is required pursuant to 40 CFR §493(b)(1) since the emissions control system is not being used to comply with the NSPS requirements. This testing requirement is included in Permit Condition 22.B. For each performance test Rexam will be required to determine the VOC-content of the coatings from formulation data supplied by the manufacturer of the coating or by an analysis of each coating, as received, using Method 24. Equations are provided in 40 CFR

§60.493(b)(1) for calculating the volume-weighted average of the total mass of VOC per volume of coating solids used during the calendar month for each affected facility. However, pursuant to 40 CFR §60.493(b)(1)(iv) and Permit Condition 22.B.1, the affected facility will be in compliance if each individual coating used by an affected facility has a VOC content equal to or less than the applicable limit specified in NSPS subpart WW and Permit Condition 18.C.3, provided no VOC-solvents are added to the coating during distribution or application.

Rexam will also be required to record each instance in which the volume-weighted average of the total mass of VOC per volume of coating solids is greater than the specified limit. On a quarterly basis, Rexam will be required to report such instances to the Department. If no such instances occur during a particular quarter, a report stating this is required to be submitted to the Department semiannually. These monitoring and reporting requirements are included in Permit Conditions 20.D and 21.B, and are required under 40 CFR §60.495(b).

5.9 MACT Subpart KKKK – National Emissions Standards for Hazardous Air Pollutants: Surface Coating of Metal Cans:

Subpart KKKK was proposed on January 15, 2003 and signed by the Administrator of EPA on August 18, 2003. As indicated in the final rule, the compliance date for existing sources is 3 years after the final rule is published in the Federal Register, which is anticipated to be October 2003. Since Rexam is currently evaluating the compliance options specified in the MACT, MCESD was unable to make the permit conditions related to the MACT specific to Rexam's operations. Therefore, Permit Condition 24 specifies the compliance date and includes the entire MACT rule. However, the emission limits were specified in Permit Condition 18.C.

If Rexam chooses a compliance option that requires a control device, Rexam will be required to submit an application for a permit revision prior to the installation of a new control device or modification of the existing control device. According to the MACT requirements, Rexam will be required to notify the Administrator of the compliance option being used for each affected source located at the facility.

6. NON-APPLICABLE REQUIREMENTS:

6.1. Rule 337 – Graphic Arts:

The three printing presses each have only one printing unit and the combined impression area of all the presses does not exceed 500 in^2. Therefore, pursuant to Rule 337 §306.2, the printing operations conducted at Rexam's facility are exempt from the requirements of Rule 337.

6.2. Permit Specific Condition (Permit No. 8700074): *The Permittee shall comply with RACT for the existing can coating facility (i.e., production lines in operation prior to the installation of Line 3), as required by Rule 220 §302.2 (old rule). RACT shall be defined as Low Solvent Coating Technology. All can coatings used at this facility must meet the VOC limitations which are set forth in Rule 336 §301, Table 1.*

This condition is moot. Rexam is already subject to Rule 336 which is a RACT rule that establishes coating limits. In addition, the VOC emissions resulting from the installation of Production Line 3 are required to be reduced by at least 81%.

6.3. Permit Specific Condition (Permit No. 8700074): *The Permittee shall operate no more than 5 of the 6 spray heads on the inside spray machines associated with Line No. 1 and Line No. 2.*

On March 17, 1989, American National Can Company (now Rexam Beverage Can Company) applied for a facility modification consisting of 2 additional spray heads, one on each of the two existing inside spray machines (i.e., Lines 1 and 2). On June 12, 1989, Maricopa County approved the installation with the requirement that Rexam only operate 5 of the 6 spray heads on each spray machine. Rexam has requested that this permit condition not carryover to the Title V permit. Rexam's basis for this request is that the PTE calculations are based on the maximum production capacity of cans and the inside spray process does not act as the production bottleneck. Therefore, the maximum production of cans, and corresponding PTE, will not be affected by the use of an additional spray head. Rexam provided information showing the production capacity of the various processes within Production Lines 1 and 2. According to Rexam, the bottlenecks occur at the PIN oven for Production Line 1 and the inside spray oven for Production Line 2. Since operating all 6 spray heads will not de-bottleneck the production process, the Department has approved Rexam's request of not requiring only 5 of 6 spray heads to be operated at one time.

7. TESTING REQUIREMENTS:

The following discussion provides justification for testing in accordance with Rule 200 §309.2.

7.1. Affect of Emissions on Public Health or the Environment:

The U.S. EPA has identified ozone as a criteria pollutant, which adversely affects human health when airborne. VOCs and NOx are precursors to the formation of ozone. In addition, the U.S. EPA has identified glycol ether as a HAP, which adversely affects human health when airborne. The Department has determined it necessary to require source testing of the emission control system since an overall VOC reduction efficiency of at least 81% was necessary to meet BACT requirements at the time Rexam installed the third production line. In addition, the VOC reduction efficiency is used in calculating VOC emissions, which will be used to monitor for compliance with the facility-wide VOC emission limit of 142 tons per year.

7.2. Test Methods:

The test method specified for determining the overall VOC reduction efficiency was adopted, in part, from NSPS, Subpart WW - Standards of Performance for the Beverage Can Surface Coating Industry (40 CFR §60.493). EPA Method 25, or an equivalent method, will be used to determine the inlet and outlet concentration of VOC at the catalytic oxidizer. Method 25 is an approved EPA test method that has shown to produce scientifically acceptable results. An alternate method will be allowed if it is believed that such method will also produce scientifically acceptable results. The mass of VOC used in the process during testing will be determined from the quantity of coating material used during the test and the VOC content of the coatings.

7.3. Feasibility:

EPA Test Methods 7, 10, 25, and the methods specified in NSPS, Subpart WW have been determined to be technically feasible.

7.4. Accuracy:

These methods have also been shown to demonstrate reasonably accurate results.

7.5. Costs:

After examining the typical costs associated with the required testing, the Department believes that the cost of conducting such tests is reasonable to determine the effectiveness of the control devices, which will be used in calculating emissions to determine compliance with emission limits; to establish parametric monitoring, to demonstrate adequacy of a maintenance program

on equipment or controls, to provide emissions rate information for possible future PSD/NSR modeling requirements, and to establish emissions rate information for potential environmental justices purposes.

Rexam is required by this Permit to test the efficiency of the catalytic oxidizer used as a VOC control device for lines 2 and 3. It should be noted that the facility has submitted a significant modification to replace the existing catalytic oxidizer with a regenerative thermal oxidizer (RTO). This modification can not be performed until the modification has been approved. It is not the intent of this Department to test the existing oxidizer only to test a new RTO that is being installed. After the issuance of the significant modification for the new oxidizer, new testing requirements will be in the modification. It is the intent of this Department to test the existing catalytic oxidizer if the RTO does not get installed per the permit revision or if the installation and the testing of the RTO is not performed in a timely manner suitable to the Department.

8. MODELING:

8.1. Glycol Ether:

Screen3 modeling was conducted for glycol ether according to MCESD "Air Toxics/Hazardous Air Pollutant Permitting Procedure" (2/29/00 Draft), except the 1999 AAAQGs were used instead of the 1992 AAAQGs. Glycol ether was modeled due to its significant level of emissions.

The emission rate for glycol ether was determined by converting the estimated annual glycol ether emissions to units based on grams per second, assuming full time operation. Glycol ether is emitting from multiple stacks. For modeling purposes it was assumed the glycol ether is emitted from one stack (from PIN Oven 3).

Input Parameters:

Glycol Ether emissions rate:	2.615 g/s (90.9 tpy)
Building Dimensions:	93.3m X 37.5m X 10.67m
Stack Height:	13.05 m (height above ground)
Stack Diameter:	0.61 m (inside dia.)
Exit Gas Velocity:	5.67 m/s
Exit Gas Temperature:	469 K

The majority of glycol ether emitted from Rexam's can coating operations is Butyl Cellosolve (CAS No. 111-76-2), which is also known as 2-Butoxyethanol. Modeling results predict that glycol ether emissions do not exceed the AAAQGs for 2-Butoxyethanol. A summary of the results are provided ion Table 9.1. Glycol ether Scrren3 model input and output results are provided in Appendix B.

Table 9.1 – Modeling Results - Glycol Ether

	2-Butoxyethanol (CAS No. 111-76-2)	
($\mu g/m^3$)	Highest Predicted Conc.[a]	AAAQG
Max. 1-hr	2,259	3,600
24-hr[b]	904	950
Annual[c]	181	No listing

Notes:

[a] Highest predicted concentration occurred at 33 m from the stack

[b] 1-Hr to 24-Hr Concentration: Multiply by 0.4
[c] 1-Hr to Annual Concentration: Multiply by 0.08

8.2. Sulfur Dioxide:

Screen3 modeling was conducted for sulfur dioxide (SO_2) in order to determine Rexam's compliance status with respect to the ground-level SO_2 concentration limit pursuant to SIP Rule 32 §F.

The emission rate for SO_2 was determined by converting the estimated hourly SO_2 emissions to units based on grams per second, assuming full time operation. Sulfur dioxide is emitting from combustion units. For modeling purposes it was assumed the SO_2 is emitted from one stack (catalytic oxidizer).

Input Parameters:

Sulfur Dioxide emission rate:	3.0×10^{-3} g/s (0.0238 lbs./hr)
Building Dimensions:	93.3m X 37.5m X 10.67m
Stack Height:	13.00 m (height above ground)
Stack Diameter:	1.0 m (inside dia.)
Exit Gas Velocity:	4.6 m/s
Exit Gas Temperature:	700 K

Modeling results predict that SO_2 emissions do not exceed the concentrations pursuant to SIP Rule 32 §F. A summary of the results are provided ion Table 9.2. Sulfur dioxide Scrren3 model input and output results are provided in Appendix B.

Table 9.2 – Modeling Results - Sulfur Dioxide

	Sulfur Dioxide	
($\mu g/m^3$)	Highest Predicted Conc.	SIP Rule 32 §F
Max. 1-hr	2.231	850
24-hr[a]	0.89	250
72-hr	<0.89	120

Notes:
[a] 1-Hr to 24-Hr Concentration: Multiply by 0.4

APPENDIX A

ESTIMATED EMISSIONS CALCULATIONS

APPENDIX B

SCREEN3 MODELING RESULTS – GLYCOL ETHER

NOTE: Screen_run5.out - Assumed 100% of GE is emitted from PIN Oven 3

```
***  SCREEN3 MODEL RUN  ***                                          06/18/03
*** VERSION DATED 96043 ***                                          08:45:59
```

Glycol Ether (assume 100% from PIN Oven 3)

```
 SIMPLE TERRAIN INPUTS:
    SOURCE TYPE            =        POINT
    EMISSION RATE (G/S)    =      2.61500
    STACK HEIGHT (M)       =      13.0500
    STK INSIDE DIAM (M)    =        .6100
    STK EXIT VELOCITY (M/S)=       5.6700
    STK GAS EXIT TEMP (K)  =     469.0000
    AMBIENT AIR TEMP (K)   =     300.0000
    RECEPTOR HEIGHT (M)    =       1.0000
    URBAN/RURAL OPTION     =        RURAL
    BUILDING HEIGHT (M)    =      10.6700
    MIN HORIZ BLDG DIM (M) =      37.5000
    MAX HORIZ BLDG DIM (M) =      93.3000

 THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

 BUOY. FLUX =    1.864 M**4/S**3;  MOM. FLUX =    1.913 M**4/S**2.

 *** FULL METEOROLOGY ***
 *********************************
 *** SCREEN AUTOMATED DISTANCES ***
 *********************************
 *** TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***
```

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1.	.0000	0	.0	.0	.0	.00	.00	.00	NA
100.	1621.	6	3.5	4.1	10000.0	14.79	4.07	9.62	SS
200.	694.1	4	2.5	2.6	800.0	16.52	15.56	12.65	SS
300.	528.3	4	2.0	2.1	640.0	19.19	22.61	15.37	SS
400.	428.3	4	2.0	2.1	640.0	19.19	29.45	18.40	SS
500.	351.0	4	1.5	1.6	480.0	24.64	36.15	20.68	SS

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1. M:

33.	2259.	6	3.0	3.5	10000.0	13.42	1.49	5.96	SS

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

****
*** SCREEN DISCRETE DISTANCES ***
****
*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
5.	.0000	0	.0	.0	.0	.00	.00	.00	NA
10.	.0000	0	.0	.0	.0	.00	.00	.00	NA
15.	.0000	0	.0	.0	.0	.00	.00	.00	NA
20.	.0000	0	.0	.0	.0	.00	.00	.00	NA
25.	.0000	0	.0	.0	.0	.00	.00	.00	NA
30.	.0000	0	.0	.0	.0	.00	.00	.00	NA
35.	2252.	6	3.0	3.5	10000.0	13.44	1.53	6.01	SS
40.	2230.	6	3.0	3.5	10000.0	13.55	1.74	6.27	SS
45.	2199.	6	3.0	3.5	10000.0	13.68	1.94	6.53	SS
50.	2158.	6	3.0	3.5	10000.0	13.82	2.14	6.80	SS
55.	2110.	6	3.0	3.5	10000.0	13.97	2.34	7.06	SS
60.	2057.	6	3.0	3.5	10000.0	14.13	2.53	7.32	SS
65.	2007.	6	3.5	4.1	10000.0	13.83	2.73	7.74	SS
70.	1956.	6	3.5	4.1	10000.0	13.95	2.92	8.01	SS
75.	1902.	6	3.5	4.1	10000.0	14.08	3.12	8.28	SS
80.	1846.	6	3.5	4.1	10000.0	14.21	3.31	8.55	SS
85.	1790.	6	3.5	4.1	10000.0	14.35	3.50	8.81	SS
90.	1733.	6	3.5	4.1	10000.0	14.49	3.69	9.08	SS
95.	1677.	6	3.5	4.1	10000.0	14.64	3.88	9.35	SS
100.	1621.	6	3.5	4.1	10000.0	14.79	4.07	9.62	SS
105.	1567.	6	3.5	4.1	10000.0	14.95	4.26	9.89	SS
110.	1535.	6	3.5	4.1	10000.0	15.11	4.45	10.28	SS
115.	1449.	6	3.5	4.1	10000.0	15.28	4.63	10.34	SS

```
   120.   1369.        6     3.5    4.1 10000.0   15.45    4.82   10.41    SS
   125.   1296.        6     3.5    4.1 10000.0   15.62    5.00   10.47    SS
   150.   1016.        6     4.0    4.6 10000.0   15.48    5.92   10.86    SS
   175.   823.1        6     4.0    4.6 10000.0   16.21    6.83   11.14    SS
   200.   694.1        4     2.5    2.6   800.0   16.52   15.56   12.65    SS

 DWASH=   MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

*************************************
     *** REGULATORY (Default) ***
    PERFORMING CAVITY CALCULATIONS
  WITH ORIGINAL SCREEN CAVITY MODEL
          (BRODE, 1988)
*************************************
  *** CAVITY CALCULATION - 1 ***       *** CAVITY CALCULATION - 2 ***
  CONC (UG/M**3)     =    .0000        CONC (UG/M**3)     =    .0000
  CRIT WS @10M (M/S) =    99.99        CRIT WS @10M (M/S) =    99.99
  CRIT WS @ HS (M/S) =    99.99        CRIT WS @ HS (M/S) =    99.99
  DILUTION WS (M/S)  =    99.99        DILUTION WS (M/S)  =    99.99
  CAVITY HT (M)      =    10.85        CAVITY HT (M)      =    10.67
  CAVITY LENGTH (M)  =    51.25        CAVITY LENGTH (M)  =    34.93
  ALONGWIND DIM (M)  =    37.50        ALONGWIND DIM (M)  =    93.30

CAVITY CONC NOT CALCULATED FOR CRIT WS > 20.0 M/S.  CONC SET = 0.0

*************************************
      END OF CAVITY CALCULATIONS
*************************************

  *****************************************
     *** SUMMARY OF SCREEN MODEL RESULTS ***
  *****************************************

 CALCULATION        MAX CONC    DIST TO   TERRAIN
  PROCEDURE        (UG/M**3)    MAX (M)    HT (M)
--------------    -----------   -------   -------
SIMPLE TERRAIN      2259.           33.        0.
```

APPENDIX C

SCREEN3 MODELING RESULTS – SULFUR DIOXIDE

```
 ***  SCREEN3 MODEL RUN  ***                                        06/04/03
 *** VERSION DATED 96043 ***                                        14:27:20
```

Rexam - Sulfur Dioxide

```
SIMPLE TERRAIN INPUTS:
   SOURCE TYPE            =        POINT
   EMISSION RATE (G/S)    =     .300000E-02
   STACK HEIGHT (M)       =      13.0000
   STK INSIDE DIAM (M)    =       1.0000
   STK EXIT VELOCITY (M/S)=       4.6000
   STK GAS EXIT TEMP (K)  =     700.0000
   AMBIENT AIR TEMP (K)   =     300.0000
   RECEPTOR HEIGHT (M)    =       1.0000
   URBAN/RURAL OPTION     =        RURAL
   BUILDING HEIGHT (M)    =      10.6700
   MIN HORIZ BLDG DIM (M) =      37.5000
   MAX HORIZ BLDG DIM (M) =      93.3000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX =    6.444 M**4/S**3;  MOM. FLUX =    2.267 M**4/S**2.

*** FULL METEOROLOGY ***
**********************************
*** SCREEN AUTOMATED DISTANCES ***
**********************************
*** TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***
```

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1.	.0000	0	.0	.0	.0	.00	.00	.00	NA
100.	1.282	6	4.0	4.6	10000.0	16.47	4.07	9.83	SS
200.	.3537	4	5.0	5.2	1600.0	18.26	15.56	13.64	SS
300.	.2688	4	4.5	4.7	1440.0	19.73	22.61	16.64	SS
400.	.2151	4	4.0	4.2	1280.0	21.71	29.45	19.50	SS
500.	.1784	4	3.5	3.6	1120.0	24.45	36.15	22.23	SS

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1. M:

33.	2.231	6	4.0	4.6	10000.0	13.49	1.49	6.22	SS

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

****
*** SCREEN DISCRETE DISTANCES ***
****
*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
5.	.0000	0	.0	.0	.0	.00	.00	.00	NA
10.	.0000	0	.0	.0	.0	.00	.00	.00	NA
15.	.0000	0	.0	.0	.0	.00	.00	.00	NA
20.	.0000	0	.0	.0	.0	.00	.00	.00	NA
25.	.0000	0	.0	.0	.0	.00	.00	.00	NA
30.	.0000	0	.0	.0	.0	.00	.00	.00	NA
35.	2.204	6	4.0	4.6	10000.0	13.52	1.53	6.27	SS
40.	2.136	6	4.0	4.6	10000.0	13.67	1.74	6.55	SS
45.	2.064	6	4.0	4.6	10000.0	13.84	1.94	6.82	SS
50.	1.989	6	4.0	4.6	10000.0	14.02	2.14	7.09	SS
55.	1.913	6	4.0	4.6	10000.0	14.22	2.34	7.37	SS
60.	1.836	6	4.0	4.6	10000.0	14.43	2.53	7.64	SS
65.	1.759	6	4.0	4.6	10000.0	14.65	2.73	7.92	SS
70.	1.683	6	4.0	4.6	10000.0	14.89	2.92	8.19	SS
75.	1.610	6	4.0	4.6	10000.0	15.13	3.12	8.46	SS
80.	1.538	6	4.0	4.6	10000.0	15.38	3.31	8.74	SS
85.	1.470	6	4.0	4.6	10000.0	15.65	3.50	9.01	SS
90.	1.404	6	4.0	4.6	10000.0	15.91	3.69	9.29	SS
95.	1.341	6	4.0	4.6	10000.0	16.19	3.88	9.56	SS
100.	1.282	6	4.0	4.6	10000.0	16.47	4.07	9.83	SS
105.	1.225	6	4.0	4.6	10000.0	16.76	4.26	10.11	SS
110.	1.196	6	4.0	4.6	10000.0	17.05	4.45	10.51	SS
115.	1.107	6	4.0	4.6	10000.0	17.34	4.63	10.57	SS
120.	1.027	6	4.0	4.6	10000.0	17.64	4.82	10.64	SS

```
   125.   .9528        6     4.0    4.6 10000.0   17.94    5.00   10.70    SS
   150.   .6584        6     4.0    4.6 10000.0   19.49    5.92   10.94    SS
   175.   .4665        6     4.0    4.6 10000.0   21.05    6.83   11.20    SS
   200.   .3537        4     5.0    5.2  1600.0   18.26   15.56   13.64    SS

 DWASH=   MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

**************************************
     *** REGULATORY (Default) ***
    PERFORMING CAVITY CALCULATIONS
  WITH ORIGINAL SCREEN CAVITY MODEL
         (BRODE, 1988)
**************************************
 *** CAVITY CALCULATION - 1 ***       *** CAVITY CALCULATION - 2 ***
  CONC (UG/M**3)     =    .2346        CONC (UG/M**3)     =    .0000
  CRIT WS @10M (M/S) =   16.25         CRIT WS @10M (M/S) =   99.99
  CRIT WS @ HS (M/S) =   17.13         CRIT WS @ HS (M/S) =   99.99
  DILUTION WS (M/S)  =    8.56         DILUTION WS (M/S)  =   99.99
  CAVITY HT (M)      =   10.85         CAVITY HT (M)      =   10.67
  CAVITY LENGTH (M)  =   51.25         CAVITY LENGTH (M)  =   34.93
  ALONGWIND DIM (M)  =   37.50         ALONGWIND DIM (M)  =   93.30

CAVITY CONC NOT CALCULATED FOR CRIT WS > 20.0 M/S.  CONC SET = 0.0

**************************************
      END OF CAVITY CALCULATIONS
**************************************

     ************************************
     *** SUMMARY OF SCREEN MODEL RESULTS ***
     ************************************
 CALCULATION        MAX CONC    DIST TO   TERRAIN
  PROCEDURE        (UG/M**3)    MAX (M)    HT (M)
-------------    -----------   -------   -------
SIMPLE TERRAIN      2.231          33.        0.
BLDG. CAVITY-1      .2346          51.       --  (DIST = CAVITY LENGTH)
BLDG. CAVITY-2      .0000          35.       --  (DIST = CAVITY LENGTH)
```

REXAM Beverage Can Company
Significant Revision S03-007
Technical Support Document

Table of Contents

December 27, 2004

I. APPLICANT

Rexam Beverage Can Company
211 North 51st Avenue
Phoenix, AZ 85043

II. INTRODUCTION

Rexam Beverage Can Company (Rexam) was issued Title V Air Quality Permit No. V95005 on April 12, 2004 for the operation of a beverage can facility located at 211 North 51st Avenue, Phoenix, Arizona in Maricopa County. Rexam has requested a Significant Permit Revision to replace the existing catalytic oxidizer with a new regenerative thermal oxidizer and to add a baghouse and corresponding ductwork for control and abatement of emissions at the same site. The facility is located on Section 9 / Township 1 North / Range 2 East at 112° 05' 28'' West longitude and 33° 22' 18" North latitude. The site elevation is 1058 feet above mean sea level (msl).

With respect to the National Ambient Air Quality Standards (NAAQS), portions of Maricopa County are designated as serious nonattainment for particulate matter with a nominal aerodynamic diameter smaller than or equal to 10 microns (PM_{10}), carbon monoxide (CO), and ozone [the Clean Air Act Amendments of 1990 §182(f) waiver has not been implemented in Maricopa County for New Source Review purposes, and therefore, both of the precursor pollutants - nitrogen oxides (NO_x) and volatile organic compounds (VOC) - are regulated by the County for ozone NAAQS purposes]. The County is designated as attainment/unclassified for sulfur dioxide (SO_2), nitrogen dioxide (NO_2), and lead. Rexam's facility is located in an area within Maricopa County that is currently designated as non-attainment for PM_{10}, CO and ozone.

The Maricopa County Environmental Services Department (MCESD) has been delegated primary responsibility for the Prevention of Significant Deterioration (PSD) program and Nonattainment New Source Review (NNSR) program in the County. MCESD also oversees the Part 70 operating program that has been approved by the administrator of the EPA in Appendix A to 40 CFR Part 70 for the county. For these reasons, this project is permitted under the jurisdiction of MCESD.

III. SOURCE DESCRIPTION

Rexam operates a 2-piece aluminum can manufacturing facility that produces and coats aluminum beverage cans (Standard Industrial Classification (SIC) Code 3411). The facility has three can production lines which are currently operating two 12-hour shifts per day, 7 days per week, 52 weeks per year. The manufacture of aluminum cans involves the processes of cupping, bodymaking, trimming, washing/drying, outer surface coating, outer surface drying, inner surface coating, inner surface drying, waxing and final shaping. These processes are described briefly below (the identifiers in parentheses correspond to those used in the emission estimate summaries as process IDs):

Cupping *(CUP)*:	The can manufacturing process begins as a sheet of aluminum is fed into a cupper (*CUP*) where a stamp cuts a coin shaped disk from the sheet of aluminum. Immediately after the disk is cut, a die shapes the disk into a cup. Nominal air pollutant emissions are associated with this process.

Bodymaking *(BDY)*:	The cup is processed by a bodymaker (*BDY*) which elongates the cup and creates the dome in the base of the can. The cup is elongated through three irons and the dome is created with a die. Oil mist emissions are associated with this process. The oil mist is treated as particulate matter with a VOC component. Oil mist emissions are captured and controlled through the use of oil mist collection systems.
Trimming *(TRM)*:	The formed cans are processed by the trimmer (*TRM*) to remove the unfinished edges of the can. Nominal air pollutant emissions are associated with this process.
Washing/ Drying *(WSH, WSHBOIL, WSHHTR1, WSHHTR2)*:	The cans are washed in a six stage washer (*WSH*) consisting of acid washes, rinses and a de-ionized water rinse. One natural gas boiler (*WSHBOIL*) provides heated wash water. The cans are dried in one of two natural gas-fired ovens (*WSHHTR1, WSHHTR2*). Uncontrolled emissions associated with this process include hydrofluoric acid and products of natural gas combustion.
Outer Surface Coating *(PRT1, PRT2, PRT3)*:	Coating of the outer surface of the cans is performed by one of three printer lines (*PRT1, PRT2, PRT3*). The outside of the can is decorated and a protective coat of overvarish is applied over the decoration and to the bottom of the can. Uncontrolled emissions associated with this process include VOCs and hazardous air pollutants (HAPs).
Outer Surface Drying *(PIN1, PIN2, PIN3)*:	The cans with wet outer surface coating are conveyed to one of three Pin ovens for drying (*PIN1, PIN2, PIN3*). Uncontrolled VOC and HAP emissions along with emissions from combustion of natural gas are associated with this process.
Inner Surface Coating *(ISM1, ISM2, ISM3)*:	The dried, outer-coated cans are processed by one of three inside spray machines (*ISM1, ISM2, ISM3*). The inside spray machines apply a lacquer coating on the inside of the can. Uncontrolled emissions of VOCs and HAPs are associated with this process.
Inner Surface Drying *(IBO1, IBO2, IBO3, OXDZR)*:	The cans with wet inner surface coating are conveyed to one of three inside bake ovens (*IBO1, IBO2, IBO3*) for drying. Uncontrolled VOC and HAP emissions along with emissions from combustion of natural gas are associated with inside bake oven number 1. VOC and HAP emissions from inside bake ovens numbers 2 and 3 are routed to a catalytic oxidizer (OXDZR) resulting in controlled emissions of these pollutants from these ovens. Additional uncontrolled emissions associated with the combustion of natural gas result from bake ovens numbers 2 and 3 and the catalytic oxidizer.
Waxing *(WAX)*:	A thin coat of wax is applied to the outer top portion of the can prior to shipping. Nominal air pollutant emissions are associated with this process.
Final Shaping *(NCK)*:	The cans are processed through a final shaping process (*NCK*) where the neck of the can and the cylindrical bottom are formed. The shaping is performed by a series of die processes and a group of bearings. Nominal air pollutant emissions are associated with this process.

IV. PROJECT DESCRIPTION

Rexam initially submitted an application for a minor permit revision dated October 14, 2003 to make the majority of the facility changes addressed by this permit revision. Rexam subsequently withdrew their minor permit revision by letter dated November 17, 2003 and submitted an application for a significant permit revision dated November 21, 2003. The significant permit revision application made request for identical facility changes to those applied for in the minor permit revision application. The significant permit revision application was submitted at the prompting of MCESD. Additional information was requested of Rexam by letter dated June 15, 2004 to which a response dated July 8, 2004 (received July 16, 2004 via email) was submitted by Rexam. The July 8, 2004 response from Rexam made alterations to the facility changes originally proposed by Rexam. This significant permit revision allows the facility changes as finally proposed by Rexam in their correspondence dated July 8, 2004.

The facility changes addressed by this permit revision include multiple changes to the capture, ducting, and control of particulate matter (PM), volatile organic compound (VOC) and hazardous air pollutant (HAP) emissions generated by process equipment. The changes are the following:

1) Replacement of the existing HIRT catalytic oxidizer with a new regenerative thermal oxidizer (RTO);
2) Installation of ductwork to vent emissions from Inside Spray Machine Bank #1, Inside Spray Machine Bank #2 and Inside Spray Machine Bank #3 to a baghouse;
3) Installation of a new baghouse to control particulate matter emissions from Inside Spray Bank #1, Inside Spray Bank #2 and Inside Spray Bank #3 (addresses compliance with condition 23 of Title V Air Quality Permit V95005);
4) Installation of ductwork to vent emissions from the new baghouse (controlling particulate matter emissions from Inside Spray Bank #1, Inside Spray Bank #2 and Inside Spray Bank #3) to the new RTO;

Detailed descriptions of the changes listed above are provided below:

1) Replacement of the existing HIRT catalytic oxidizer with a new regenerative thermal oxidizer (RTO)

On July 7, 1989, American National Can Company (now Rexam Beverage Can Company) applied for a facility modification consisting of the addition of a 3rd production line and a catalytic oxidizer, which would control VOC emissions from the inside spray ovens from Production Lines 2 and 3. On September 13, 1989, MCESD approved the installation of the 3rd production line.

Condition 19.C.4 of Title V Air Quality Permit V95005 requires that the exhaust from inside bake ovens 2 and 3 be ducted to the existing catalytic oxidizer and that the oxidizer be operated whenever beverage cans are processed through inside bake ovens 2 and 3. The catalytic oxidizer currently in operation at the facility is a HIRT oxidizer serial number 611B1089. The oxidizer has a maximum heat input rating of 9.0 MMBtu/hr. It is currently assumed that the existing oxidizer functions at 93.1% or greater destruction efficiency in order to meet the required overall VOC reduction efficiency required in Permit V95005 Condition 19.C.5 of 81% (based on an assumed capture efficiency of 87%). Permit V95005 Condition 19.C.6 requires that the catalytic oxidizer be operated at 800°F.

The existing catalytic oxidizer will be replaced by a regenerative thermal oxidizer (RTO) with a maximum design capacity of 20,000 scfm (based on Rexam's correspondence dated October 28, 2004) and a maximum heat input rating of 4.5 MMBtu/hr. The manufacturer and model number are yet to be determined for the equipment to be installed. The new RTO will operate between 1500 and 1600 °F. Based on data supplied by Rexam, the new RTO and associated ductwork will achieve a combined capture and control efficiency equivalent to or better than the 81% overall VOC reduction efficiency required by condition 19.C.5. Permit V95005 Condition 22.A will require performance testing of the new equipment upon issuance of Significant Permit Revision S03-007 to support Rexam's claim.

2) Installation of ductwork to vent emissions from Inside Spray Machine Bank #1, Inside Spray Machine Bank #2 and Inside Spray Machine Bank #3 to a baghouse:

Ductwork will be installed on the exhaust side of the inside spray machine banks #1, #2 and #3 to route the overspray emissions from this coating equipment to a new baghouse.

3) Installation of a new baghouse to control particulate matter emissions from Inside Spray Bank #1, Inside Spray Bank #2 and Inside Spray Bank #3 (addresses compliance with condition 23 of this permit):

Permit V95005 Condition 23.A currently requires Rexam to install overspray removal filters with a removal efficiency of 92% or greater at the exhaust side of the inside spray machine banks in accordance with the compliance schedule outlined in the permit. For Inside Spray Banks #1, #2 and #3, in lieu of the installation of overspray removal filters, Rexam has proposed the installation of a baghouse for control of overspray emissions. Based on data supplied by Rexam, the new baghouse and associated ductwork will achieve an overspray removal efficiency of at least 92% as required by the reference permit condition.

The new baghouse will have a rated capacity of 6,000 scfm. The most recently submitted operation and maintenance plan for the new baghouse lists an operating range of between 1 and 6 inches of water for the pressure drop through the baghouse. The manufacturer and model are yet to be determined.

4) Installation of ductwork to vent emissions from the new baghouse controlling particulate matter emissions from Inside Spray Bank #1, Inside Spray Bank #2 and Inside Spray Bank #3 to the new RTO:

The exhaust from the baghouse will be further controlled by ducting the outlet gas flow to the new RTO described in number 1) above.

V. PRE-CHANGE FACILITY EMISSIONS:

The primary air pollutants associated with the Rexam facility are VOCs, (which are precursors to the formation of ozone, a criteria pollutant) and HAPs. Both pollutants are emitted from coating the interior and exterior of aluminum cans. Particulate matter with an aerodynamic diameter less than 10 microns (PM_{10}), nitrogen oxides (NOx), and carbon monoxide (CO), are not emitted from Rexam's facility in quantities exceeding their respective major source thresholds pursuant to Maricopa County Air Pollution Control Regulations (MCAPCR) Rule 240 §210. Table V-1 summarizes the estimated maximum facility emissions as calculated at the time of the Title V permit issuance, with the exception of the two changes mentioned in footnote 1 of the table. These estimates take air pollution control devices into account, but do not incorporate the facility-wide VOC emissions limit contained in Permit V95005 Condition 18.C.1. The estimates are also based on actual coating VOC content rather than the maximum coating VOC content allowed by Permit V95005 Condition 18.C.2.

Table V-1: Estimated Pre-change Facility Emissions

Process ID	Stack ID	Control Device	Hourly Emissions (lb/hr)						Annual Emissions (ton/yr)					
			NO_x	CO	SO_2	PM	VOC	HAP	NO_x	CO	SO_2	PM	VOC	HAP
CUP	None	None	Trivial Fugitive Emissions of VOC from Lubricant											
BDY	OBP-1	OBP-1				0.06	0.004					0.27	0.017	
	OBP-2	OBP-2				0.06	0.004					0.27	0.017	
TRM	None	None												
WSH	WSH	None						No Data						0.013
WSHBOIL	WSHBOIL	None	0.33	0.28	0.00	0.03	0.02	0.01	1.46	1.23	0.01	0.11	0.08	0.03
WSHHTR1	S008	None	0.34	0.29	0.00	0.03	0.02	0.01	1.50	1.26	0.01	0.11	0.08	0.03
WSHHTR2	S009	None	0.30	0.26	0.00	0.02	0.02	0.01	1.33	1.12	0.01	0.10	0.07	0.03
PRT1	S014	None					0.44	0.30					1.94	1.31
PRT2	S014	None					0.53	0.36					2.31	1.56
PRT3	S014	None					0.54	0.37					2.38	1.61
PIN1	S001	None	0.38	0.32	0.00	0.03	5.22	3.26	1.67	1.40	0.01	0.13	22.88	14.28
PIN2	S003	None	0.24	0.20	0.00	0.02	6.24	3.89	1.04	0.88	0.01	0.08	27.32	17.05
PIN3	S005	None	0.24	0.20	0.00	0.02	6.41	4.00	1.04	0.88	0.01	0.08	28.06	17.52
ISM1	S011/FUG	None				0.15	1.70	0.79				0.64	7.46	3.44
ISM2	S012/FUG	None				0.17	2.04	0.94				0.76	8.94	4.12
ISM3	S013/FUG	None				0.18	2.08	0.96				0.78	9.13	4.21
IBO1	S002	None	0.29	0.24	0.00	0.02	11.42	5.26	1.25	1.05	0.01	0.10	50.02	23.05
IBO2	S006/S007	CATOX	0.50	0.42	0.00	0.04	0.97	0.44	2.17	1.82	0.01	0.16	4.25	1.94
IBO3	S006/S007	CATOX	0.50	0.42	0.00	0.04	0.99	0.45	2.17	1.82	0.01	0.16	4.33	1.98
OXDZR	S004	N/A	0.86	0.72	0.01	0.07	0.05	0.02	3.75	3.15	0.02	0.29	0.21	0.07
LN1FUG	FUG	None					0.78	0.61					3.40	2.68
LN2FUG	FUG	None					0.81	0.64					3.56	2.81
LN3FUG	FUG	None					0.85	0.67					3.73	2.94
WAX	None	None												
NCK	None	None												
Total Facility Emissions[1]			**3.97**	**3.34**	**0.02**	**0.92**	**41.14**	**22.98**	**17.39**	**14.61**	**0.10**	**4.04**	**180.20**	**100.68**

[1] The discrepancy in total annual PM emissions of 4.04 tpy as compared to the 3.5 tpy reported in the Title V permit TSD is believed to be due to the omission of PM emissions from Bodymaking in the Title V permit TSD count.

The discrepancy in hourly and annual VOC emissions is due to the use of an 80% overall VOC reduction efficiency in the Title V permit TSD for lines 2 and 3 which has been revised to 81% to be consistent with the permit requirements, and updates to the cleaner usage values and formed formaldehyde emissions based on data provided in responses from Rexam to information requests (these changes also affects HAP emission estimates).

Detailed pre-change emission calculations for the facility are included in Attachment A. As discussed above, the total VOC emissions represented in Table V-1 do not reflect the allowable emissions for the facility. Therefore, Table V-2 represents the facility's pre-change potential-to-emit (PTE) as currently permitted (including the facility-wide VOC emission limit of Permit V95005 Condition 18.C.1):

Table V-2: Estimated Pre-change PTE as Permitted

NO_x	CO	SO_2	PM	VOC	HAP
17.4 tpy	14.6 tpy	0.1 tpy	4.0 tpy	142 tpy	100.7 tpy

VI. CHANGES IN ANNUAL EMISSION CALCULATIONS AND TOTAL POST-CHANGE FACILITY EMISSIONS:

The facility changes permitted by this significant revision will result in changes to the estimates of facility-wide emissions of VOC, HAP and PM. The changes in emission estimates are described below for each facility change as listed in Section IV above.

1) Replacement of the existing HIRT catalytic oxidizer with a new regenerative thermal oxidizer (RTO)

This change made by itself would affect emissions from: (1) the inside bake ovens for lines 2 and 3 (Process IDs: *IBO2, IBO3*) because they are currently the only processes controlled by the existing oxidizer; and (2) the natural gas combustion emissions associated with the oxidizer itself (Process ID: *OXDZR* changing to *RTO*) as the natural gas usage is lower for the replacement RTO. However, when this change is viewed in conjunction with changes 2 and 4, i.e. the routing of inside spray machine banks #1, #2 and #3 exhaust to the oxidizer, emissions from these sources (Process IDs: *ISM1, ISM2, ISM3*) are also affected. In addition, Rexam has proposed to change the emission calculation methodology to incorporate only the overall VOC reduction efficiency for the inside spray coating operations and an amended distribution of VOC emissions by location (i.e. between the spray booths and the ovens). Because there are no permit conditions requiring specific capture and control efficiencies, and because the proposed distribution of VOC emissions is consistent with the distribution range listed in AP-42 Table 4.2.2.2-1 for three-piece can coating (there is no data listed for two-piece can coating), the following emission estimates reflect the proposed changes. When the performance of the new RTO is assessed through performance testing for compliance with applicable permit conditions, Rexam will be able to more accurately characterize the nature and location of the emissions associated with these processes.

The new RTO has a maximum natural gas heat input rating of 4.5 MMBtu/hr as compared to the 9 MMBtu/hr rating of the existing catalytic oxidizer, resulting in a change in the natural gas combustion emissions associated with the oxidizer emission source. It should be noted that an increased NO_x emission rate on a lb/Btu basis is expected for the RTO as compared to the catalytic oxidizer due to the higher combustion temperature associated with the RTO and the resulting formation of additional thermal NO_x. However, because AP-42 emission factors for natural gas combustion are used for estimating the emissions from both the catalytic oxidizer and the RTO, this expected emissions increase is not reflected in the emission calculations.

Detailed calculations associated with the changes discussed above are included in Attachment B (Post-Change Facility Wide Emission Calculations) and a summary of the annual pre-change emissions, post-change emissions, and associated emissions decrease is given in Table VI-1 below.

Table VI-1: Change in Estimated Annual Emissions Associated w/ Facility Changes 1, 2 and 4

	Process ID	Annual Emissions (ton/yr)					
		NO_x	CO	SO_2	PM	VOC	HAP
Pre-Change Emissions	ISM1				0.64	7.46	3.44
	ISM2				0.76	8.94	4.12
	ISM3				0.78	9.13	4.21
	IBO1	1.25	1.05	0.01	0.10	50.02	23.05
	IBO2	2.17	1.82	0.01	0.16	4.25	1.94
	IBO3	2.17	1.82	0.01	0.16	4.33	1.98
	OXDZR	3.75	3.15	0.02	0.29	0.21	0.07
Post-Change 1, 2 & 4 Emissions	ISM1				0.64	5.74	2.65
	ISM2				0.76	1.70	0.78
	ISM3				0.78	1.74	0.80
	IBO1	1.25	1.05	0.01	0.10	51.74	23.84
	IBO2	2.17	1.82	0.01	0.16	11.49	5.28
	IBO3	2.17	1.82	0.01	0.16	11.73	5.40
	OXDZR	1.88	1.58	0.01	0.14	0.10	0.04
Change in Estimated Emissions	ISM1				0.00	-1.72	-0.79
	ISM2				0.00	-7.24	-3.34
	ISM3				0.00	-7.40	-3.41
	IBO1	0.00	0.00	0.00	0.00	1.72	0.79
	IBO2	0.00	0.00	0.00	0.00	7.24	3.34
	IBO3	0.00	0.00	0.00	0.00	7.40	3.41
	OXDZR	-1.88	-1.58	-0.01	-0.14	-0.10	-0.04
	Total	**-1.88**	**-1.58**	**-0.01**	**-0.14**	**-0.10**	**-0.04**

2) Installation of ductwork to vent emissions from Inside Spray Machine Bank #1, Inside Spray Machine Bank #2 and Inside Spray Machine Bank #3 to a baghouse:

The emission changes associated with the installation of this ductwork are reflected in the change in emissions listed in number 1 above and number 3 below.

3) Installation of a new baghouse to control particulate matter emissions from Inside Spray Bank #1, Inside Spray Bank #2 and Inside Spray Bank #3 (addresses compliance with condition 23 of this permit):

As discussed above, Permit V95005 Condition 23.A of the permit requires Rexam to install overspray removal filters with a removal efficiency of 92% or greater at the exhaust side of the inside spray machine banks in accordance with the compliance schedule outlined in the permit. For Inside Spray Banks #1, #2 and #3 (Process IDs: *ISM1, ISM2, ISM3*), in lieu of the installation of overspray removal filters, Rexam will be installing a baghouse for control of overspray emissions. The permittee has asserted (based on data received from prospective manufacturers) that the baghouse will be 92% to 95% efficient at reducing overspray emissions. Rexam had previously assumed a 90% reduction in overspray emissions due to the agglomeration of material on overspray sleeves. The 2% increase in control results in a corresponding decrease in estimated PM emissions from these processes. The following table illustrates this reduction on an annual basis.

Table VI - 2: Change in Estimated Annual Emissions Associated With Facility Change 3

	Process ID	Annual Emissions (ton/yr)					
		NO_x	CO	SO_2	PM	VOC	HAP
Post-Change 1, 2 & 4 Emissions	ISM1				0.64	5.74	2.65
	ISM2				0.76	1.70	0.78
	ISM3				0.78	1.74	0.80
Post-Change 1, 2, 3 & 4 Emissions	ISM1				0.51	5.74	2.65
	ISM2				0.61	1.70	0.78
	ISM3				0.62	1.74	0.80
Change in Estimated Emissions	ISM1				-0.13	0.00	0.00
	ISM2				-0.15	0.00	0.00
	ISM3				-0.16	0.00	0.00
	Total				**-0.44**	**0.00**	**0.00**

4) Installation of ductwork to vent emissions from the new baghouse controlling particulate matter emissions from Inside Spray Bank #2 and Inside Spray Bank #3 to the new RTO:

The emission changes associated with the installation of this ductwork are reflected in the change in emissions listed in number 1 above.

Complete Summary of Changes in Estimated Annual Emissions

The following table gives a summary of the total change in estimated annual emissions associated with the facility and calculation methodology changes addressed by this significant revision (changes also occur on an hourly basis as reflected in the calculations presented in the appendices).

Table VI - 3: Total Change in Estimated Annual Emissions for Permit Revision

	Process ID	Annual Emissions (ton/yr)					
		NO_x	CO	SO_2	PM	VOC	HAP
Pre-Change Emissions	ISM1				0.64	7.46	3.44
	ISM2				0.76	8.94	4.12
	ISM3				0.78	9.13	4.21
	IBO1	1.25	1.05	0.01	0.10	50.02	23.05
	IBO2	2.17	1.82	0.01	0.16	4.25	1.94
	IBO3	2.17	1.82	0.01	0.16	4.33	1.98
	OXDZR	3.75	3.15	0.02	0.29	0.21	0.07
Post-Change Emissions	ISM1				0.51	5.74	2.65
	ISM2				0.61	1.70	0.78
	ISM3				0.62	1.74	0.80
	IBO1	1.25	1.05	0.01	0.10	51.74	23.84
	IBO2	2.17	1.82	0.01	0.16	11.49	5.28
	IBO3	2.17	1.82	0.01	0.16	11.73	5.40
	OXDZR	1.88	1.58	0.01	0.14	0.10	0.04
Change in Estimated Emissions	ISM1				-0.13	-1.72	-0.79
	ISM2				-0.15	-7.24	-3.34
	ISM3				-0.16	-7.40	-3.41
	IBO1	0.00	0.00	0.00	0.00	1.72	0.79
	IBO2	0.00	0.00	0.00	0.00	7.24	3.34
	IBO3	0.00	0.00	0.00	0.00	7.40	3.41
	OXDZR	-1.88	-1.58	-0.01	-0.14	-0.10	-0.04
	Total	**-1.88**	**-1.58**	**-0.01**	**-0.58**	**-0.10**	**-0.04**

Post-Change Facility Emissions

The following table establishes the post-change emissions associated with the facility. It must be noted, however, that once again, the VOC emissions listed do not reflect the facility's permitted allowable emissions due to the permitted facility wide emissions limit. The estimates are also based on actual coating VOC content rather than the maximum VOC content allowed for coatings by Permit V95005 Condition 18.C.2. The VOC emissions listed identify the facility's estimated physical capability to emit with control equipment in place, based on the properties of the coatings currently in use, and the future control configuration of the facility.

Table VI-4: Estimated Post-change Facility Emissions

Process ID	Stack ID	Control Device	Hourly Emissions (lb/hr)						Annual Emissions (ton/yr)					
			NO_x	CO	SO_2	PM	VOC	HAP	NO_x	CO	SO_2	PM	VOC	HAP
CUP	None	None	Trivial Fugitive Emissions of VOC from Lubricant											
BDY	OBP-1	OBP-1				0.06	0.004					0.27	0.017	
	OBP-2	OBP-2				0.06	0.004					0.27	0.017	
TRM	None	None												
WSH	WSH	None						No Data						0.013
WSHBOIL	WSHBOIL	None	0.33	0.28	0.00	0.03	0.02	0.01	1.46	1.23	0.01	0.11	0.08	0.03
WSHHTR1	S008	None	0.34	0.29	0.00	0.03	0.02	0.01	1.50	1.26	0.01	0.11	0.08	0.03
WSHHTR2	S009	None	0.30	0.26	0.00	0.02	0.02	0.01	1.33	1.12	0.01	0.10	0.07	0.03
PRT1	S014	None					0.44	0.30					1.94	1.31
PRT2	S014	None					0.53	0.36					2.31	1.56
PRT3	S014	None					0.54	0.37					2.38	1.61
PIN1	S001	None	0.38	0.32	0.00	0.03	5.22	3.26	1.67	1.40	0.01	0.13	22.88	14.28
PIN2	S003	None	0.24	0.20	0.00	0.02	6.24	3.89	1.04	0.88	0.01	0.08	27.32	17.05
PIN3	S005	None	0.24	0.20	0.00	0.02	6.41	4.00	1.04	0.88	0.01	0.08	28.06	17.52
ISM1	S011	OXDZR				0.12	1.31	0.60				0.51	5.74	2.65
ISM2	S012	OXDZR				0.14	0.39	0.18				0.61	1.70	0.78
ISM3	S013	OXDZR				0.14	0.40	0.18				0.62	1.74	0.80
IBO1	S002	None	0.29	0.24	0.00	0.02	11.81	5.44	1.25	1.05	0.01	0.10	51.74	23.84
IBO2	S006/S007	OXDZR	0.50	0.42	0.00	0.04	2.62	1.21	2.17	1.82	0.01	0.16	11.49	5.28
IBO3	S006/S007	OXDZR	0.50	0.42	0.00	0.04	2.68	1.23	2.17	1.82	0.01	0.16	11.73	5.40
OXDZR	S004	N/A	0.43	0.36	0.00	0.03	0.02	0.01	1.88	1.58	0.01	0.14	0.10	0.04
LN1FUG	FUG	None					0.78	0.61					3.40	2.68
LN2FUG	FUG	None					0.81	0.64					3.56	2.81
LN3FUG	FUG	None					0.85	0.67					3.73	2.94
WAX	None	None												
NCK	None	None												
Total Facility Emissions			**3.54**	**2.98**	**0.02**	**0.79**	**41.12**	**22.98**	**15.52**	**13.03**	**0.09**	**3.46**	**180.10**	**100.64**

The facility's new PTE as permitted by this significant permit revision is listed at the conclusion of Section VII's discussion of NSR Applicability (see Table VII-2).

VII. NEW SOURCE REVIEW (NSR) APPLICABILITY

The Rexam facility is a major source of VOC emissions. Accordingly, the changes at the facility that affect VOC emissions may possibly be subject to NSR as a potential major modification.

A major modification is defined in MCAPCR Rule 100 §200.59 to be any physical change or change in the method of operation of a major source that would result in a significant net emissions increase of any regulated air pollutant. This definition closely follows the federal pre-NSR reform definition at 40 CFR 52.21(b)(2)(i), and applies as Arizona's plan for the attainment of the national ambient air quality standards has been conditionally approved per 40 CFR §52.123 .

The regulatory meaning of "physical change or change in the method of operation" is addressed in MCAPCR Rule 100 §200.59.c which closely follows the pre-NSR reform language of 40 CFR 52.21(b)(2)(iii). The changes permitted at Rexam's facility by Significant Permit Revision S03-007 do not meet the exemptions listed. Accordingly, the facility changes addressed by this revision are considered to be a physical change or change in the method of operation of Rexam's facility and must therefore be analyzed with respect to NSR applicability for a major modification for pollutants that are emitted above major source thresholds. Thus, it must be identified whether the changes will result in a significant net emissions increase of volatile organic compounds (VOC) as Rexam has been identified as a major source of VOC emissions and not of other applicable pollutants. Note that the significance level for major sources of VOC emissions in ozone nonattainment areas is 25 tons per year (tpy) per Maricopa County Air Pollution Control Regulations (MCAPCR) Rule 240 §307.2

Based on review of the economic impacts of the installation of the new, more efficient oxidizer, it has been identified that this change to the facility has the potential to result in an actual emissions increase. The replacement oxidizer will burn less natural gas than the existing oxidizer, resulting in lower natural gas costs. Due to the probable decrease in unit production cost associated with the decrease in natural gas usage, it has been identified that it may be financially attractive to divert beverage can production from other Rexam facilities to the Rexam Phoenix facility. This potential production diversion may accordingly result in an increase in actual emissions.

A net emissions increase is defined in MCAPCR Rule 100 §200.66 to be the amount by which the sum of the following exceed zero: (1) any increase in actual emissions from a particular physical change or change in the method of operation at a stationary source; and (2) any other increases and decreases in actual emissions at the source that are contemporaneous with the particular change and are otherwise creditable. This definition closely follows the pre-NSR reform language of 40 CFR 52.21(b)(3)(i).

Under the definition of actual emissions (MCAPCR Rule 100 §200.3[c], which closely follows the pre-NSR reform language of 40 CFR 52.21[b][21][iv]), it is stated that for any emissions unit at a Title V source, other than an electric utility steam generating unit, that has not begun normal operations, actual emissions shall equal the unit's potential to emit (PTE). Historically, EPA and the courts have interpreted this provision to mean that units which have undertaken a non-routine physical or operational change have not "begun normal operations" within the meaning of the NSR regulations, since pre-change emissions may not be indicative of how the units will be operated following the non-routine change.

With regard to the changes permitted by Significant Permit Revision S03-007 for Rexam's Phoenix facility, because the proposed changes are a "physical change or change in the method of operation", the modified units have not "begun normal operations" prior to the implementation of the proposed changes, and thus, the post-change actual emissions are equal to the modified unit's potential to emit. Therefore, the emissions increase associated with this facility change (part (1) of the definition of net emissions increase) amounts to the plant-wide VOC PTE (established by Permit V95005 Condition 18.C.1) minus the past actual emissions.

In order to calculate the emissions increase associated with the facility change permitted by Significant Permit Revision S03-007, the actual emissions prior to the facility change must be established. A file review was performed to identify the annual emissions reported to MCESD by Rexam for the 2002 and

2003 calendar years. The material usage data provided with those reports was also substituted into the emission calculation spreadsheets prepared for the analysis of the facility emissions presented in Section VI above (see Attachments C and D). Table VII-I lists the corresponding reported and calculated annual emission values. Table VII-I also lists the corresponding averages and standard deviations for these values.

Table VII-1: Comparison of Actual VOC Emission Estimates for the 2002 and 2003 Operating Years

Data	2002	2003
Revised Annual Emissions Report (lbs)	231,282	225,119
MCESD Calculated (lbs)	233,411	225,665
Average (lbs)	232,347	225,392
Average (tons)	116	112.5

The Rexam Phoenix facility's actual VOC emissions are the average rate, in tons per year (tpy), at which the emissions units actually emitted the pollutant during the previous 2-year period. Based on the above data, the value is calculated to be 114 tpy.

The emissions increase associated with this facility change is then calculated as the difference in the facility's current actual emissions and the facility's post-change actual emissions (which has been defined above to be the facility's PTE). This value is calculated as 142 tpy – 114 tpy = 28 tpy. This value exceeds the significance level and also exceeds the 1 tpy requirement for a 5-year aggregation exercise per MCAPCR Rule 240 §307.2. Thus netting, the second part of the definition of "net emissions increase", is required.

Based on a review of MCESD files, the only facility change implemented in the previous five years is the installation of an oil mist collection system associated with the control of particulate matter and the associated VOC emissions from the bodymaker machinery. This is consistent with Rexam's letter of September 28, 2004 which lists prior facility changes. However, in the netting analysis, changes made that do not affect the VOC emissions cap are inconsequential as they are not creditable net emissions increases or decreases (because the allowable emissions for the facility are unaffected). Thus, because the VOC emissions cap has not been adjusted since it was established in 1989, there have been no creditable net emissions increases or decreases since that time, which is inclusive of the previous five years.

As a result, the net emissions increase associated with the change as originally proposed by Rexam is 28 tpy. However, Rexam has requested by letter dated September 28, 2004 that the VOC emission limit contained in Permit V95005 Condition 18.C.1 be voluntarily reduced to avoid triggering NSR. In order to avoid NSR, the proposed change must not result in a significant net emissions increase. As discussed above, the significance level for major sources of VOC emissions in ozone nonattainment areas is 25 tpy. In order for the proposed change not to result in a significant net emissions increase, the permitted facility-wide VOC emissions limit must be reduced to 138 tpy (138 tpy - 114 tpy = 24 tpy). Note that, due to the inexact nature of the recording and reporting mechanisms for VOC emissions, the calculation of the permitted facility-wide limit is performed using a 24 tpy increase rather than a value nearer the significance level of 25 tpy.

The Rexam facility is not a major emission source of other conventional air pollutants reviewed as part of the NSR program. Therefore, in order for the changes allowed by this significant permit revision to warrant review for conventional air pollutants other than VOC, the emissions increase associated with the change would have to be a considered a "major source" as defined in MCAPCR Rule 240 §210 of these pollutants. Thus, an emissions increase of an individual regulated pollutant other than VOC must increase the facility's emissions to the qualifying levels in MCAPCR Rule 240 §210.1 or 210.2. Conventional air pollutant emissions other than VOC will not increase to major source levels as a result of the facility

change permitted here, and therefore NSR also does not apply to this significant permit revision for these pollutants.

Based on this analysis, the PTE for the Rexam facility as a result of this significant permit revision is presented in Table VII-2.

Table VII-2: Post-change PTE as Permitted

NO_x	CO	SO_2	PM	VOC	HAP
15.5 tpy	13.0 tpy	0.1 tpy	3.5 tpy	138 tpy	100.6 tpy

VIII. NEW SOURCE PERFORMANCE STANDARD (NSPS) APPLICABILITY

40 CFR Part 60 Subpart WW, which specifies standards of performance for the beverage can surface coating industry, applies to portions of Rexam's facility. The provisions of subpart WW apply to each affected facility for which construction, modification, or reconstruction commenced after November 26, 1980. Affected facilities located at Rexam that are subject to the requirements under NSPS, Subpart WW include the Line 2 overvarnish coating operations, Line 3 overvarnish coating operations, and Lines 1, 2, and 3 inside spray coating operations (Lines 1 and 2 inside spray coating operations were modified in 1989, adding a sixth spray head to each line).

Pursuant to 40 CFR §§ 60.492(b) and (c) Rexam is required to limit the volume-weighted calendar-month average VOC emissions to 0.46 kilogram of VOC per liter of coating solids from each two-piece can overvarnish coating operation; and 0.89 kilogram of VOC per liter of coating solids from each two-piece can inside spray coating operation. This requirement is included in Permit Condition 18.C.3. The source is using VOC-compliant coatings rather than the existing catalytic oxidizer or proposed RTO to ensure compliance with the requirements of NSPS, Subpart WW.

The changes permitted as part of this significant revision will not alter the applicability of NSPS Subpart WW to Rexam's facility and will not change any of the associated permit requirements.

IX. NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAP) APPLICABILITY

40 CFR Part 61 identifies NESHAP, and 40 CFR Part 63 identifies NESHAP for source categories (also referred to as maximum achievable control technology [MACT] standards). NESHAP in 40 CFR Part 61 have not been identified as applicable to the Rexam facility. 40 CFR Part 63 Subpart KKKK (National Emissions Standards for Hazardous Air Pollutants: Surface Coating of Metal Cans) has been identified as containing applicable requirements for Rexam's facility. Subpart KKKK was proposed on January 15, 2003 and signed by the Administrator of EPA on August 18, 2003. As indicated in the final rule, the compliance date for existing sources is 3 years after the final rule is published in the Federal Register, which occurred on November 13, 2003. Since Rexam was evaluating the compliance options specified in the MACT standard at the time of issuance of the current Title V permit, MCESD was unable to make the permit conditions related to the MACT standard specific to Rexam's operations. Therefore, Permit Condition 24 specifies the compliance date and includes the entire MACT standard.

Rexam continues to evaluate compliance options specified in the MACT standard and the changes permitted by this significant permit revision do not address compliance with these provisions. According to the MACT requirements, Rexam will be required to notify the Administrator of the compliance option being used for each affected source located at the facility. MCESD policy requires that Rexam submit a significant permit revision application detailing the compliance options that will be used, not less than 18 months prior to the compliance date (thus, the significant permit revision application must be submitted by May 13, 2005). Permit V95005 Condition 23.C has been added with this permit revision to require such submittal.

X. COMPLIANCE ASSURANCE MONITORING (CAM) REQUIREMENTS

Provisions for compliance assurance monitoring (CAM) were published in the Federal Register on October 22, 1997 and are found in 40 CFR Part 64. The intent of the CAM rule is to require owners and operators to monitor the operation and maintenance of their control equipment so that they can evaluate the performance of their control devices and report whether or not their facilities meet established emission standards under Title V of the Clean Air Act Amendments. CAM requirements apply to "pollutant-specific emission units" at a major Title V source if the unit meets multiple criteria. The criteria are discussed below as they relate to the equipment changes permitted by this significant revision (note that CAM requirements potentially apply to units at the Rexam facility as the facility is a major source of VOC and HAP emissions required to obtain a Title V permit):

1. *A unit must be subject to an emission limitation or standard for the applicable regulated air pollutant (or a surrogate thereof), other than an emission limitation or standard that is exempt.*

   Multiple emission units at the Rexam facility are subject to multiple emission limitations and standards. As discussed in Sections VII, VIII and IX above, some or all of the units at the facility must comply with applicable emission limitations and standards associated with NSR, NSPS, and MACT (NESHAP for source categories). However some of these emission limitations or standards are exempt as discussed below:

   a. *Emission limitations or standards proposed by the Administrator after November 15, 1990 pursuant to section 111 or 112 of the Act.*

      As discussed in Section IX, MACT Subpart KKKK was proposed on January 15, 2003. Therefore, units subject to the emission limitations and/or standards of this MACT standard are not required to comply with additional CAM requirements solely as a result of being subject to MACT Subpart KKKK.

   b. *Stratospheric ozone protection requirements under title VI of the Act.*

      These requirements do not pertain to the Rexam facility.

   c. *Acid Rain Program requirements pursuant to sections 404, 405, 406, 407(a), 407(b), or 410 of the Act.*

      These requirements do not pertain to the Rexam facility.

   d. *Emission limitations or standards or other applicable requirements that apply solely under an emissions trading program approved or promulgated by the Administrator under the Act that allows for trading emissions within a source or between sources.*

      These requirements do not pertain to the Rexam facility.

   e. *An emissions cap that meets the requirements specified in §70.4(b)(12) or §71.6(a)(13)(iii) of this chapter.*

      The requirements referred to pertain to emission caps established to allow permittees to make facility changes without requiring permit revisions. This exemption does not apply to the VOC emissions cap contained in condition 18.C.1 of this permit as this cap has been established in order to comply with requirements of the NSR program.

   f. *Emission limitations or standards for which a part 70 or 71 permit specifies a continuous compliance determination method, as defined in §64.1.*

The conditions of this permit have not been identified as specifying continuous compliance determination methods.

Based on the above analysis of exempted emission limitations and standards, units that must comply with applicable provisions of NSR and NSPS are potentially subject to CAM requirements.

2. *The unit must use a control device to achieve compliance with any such emission limitation or standard.*

   As discussed in Section VIII above, the permittee is using VOC-compliant coatings rather than the existing catalytic oxidizer or proposed RTO to ensure compliance with the requirements of NSPS, Subpart WW. Therefore, units subject to the emission limitations and/or standards of this NSPS are not required to comply with additional CAM requirements solely as a result of being subject to NSPS Subpart WW.

   However, the emission units vented to the oxidizer are using a control device to comply with the NSR emission limit contained in condition 18.C.1 of this permit. As permitted by this significant permit revision, these units include the inside bake ovens for lines 2 and 3 (Process IDs: IBO2, IBO3) and inside spray machine banks #1, #2 and #3 (Process IDs: ISM1, ISM2, ISM3). Therefore, these units are potentially subject to CAM requirements.

3. *The unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source. For purposes of this paragraph, "potential pre-control device emissions" shall have the same meaning as "potential to emit," as defined in 40 CFR §64.1, except that emission reductions achieved by the applicable control device shall not be taken into account.*

   As listed above, the emission units for which CAM may apply include the inside bake ovens for lines 2 and 3 (Process IDs: IBO2, IBO3) and inside spray machine banks #1, #2 and #3 (Process IDs: ISM1, ISM2, ISM3) as these processes meet the definition of emission unit provided in 40 CFR §70.2 (emissions unit means any part or activity of a stationary source that emits or has the potential to emit any regulated air pollutant or any pollutant listed under section 112(b) of the Act).

   Accordingly, each of these emission units must be analyzed with respect to their individual potential pre-control device emissions as they relate to the major source threshold for the applicable regulated air pollutant. In the case of each of these emission units, the applicable regulated air pollutant is VOC as the emission limitation which may trigger CAM is the facility-wide VOC emissions cap established as a result of NSR requirements. An annual emission rate of 50 or more tons of VOC would require a source to be classified as a major source of VOC emissions in the serious ozone non-attainment area in which the Rexam facility is located (MCAPCR Rule 240 §210.1). Table X-1 summarizes the estimated potential pre-control device emissions for each of the subject emission units, and detailed emission calculations are included in Attachment C. For the calculations associated with these estimates, the maximum VOC contents allowed by permit condition 18.C.2 for various coatings have been substituted for the actual coating properties used in the emission estimates in sections V and VI above.

Table X-1: Estimated VOC Potential Pre-Control Device Emissions

Emission Unit	Potential Pre-Control Device Emissions
IBO2	226 tpy
IBO3	231 tpy
ISM1	28 tpy
ISM2	34 tpy
ISM3	34.5 tpy

Based on the estimated values listed in Table X-1, the inside bake ovens for lines 2 and 3 (Process IDs: IBO2, IBO3) have potential pre-control device emissions greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source of VOC emissions. Thus, based on the applicability criteria of 40 CFR §64.2 as discussed above, the inside bake ovens for lines 2 and 3 are required to meet the applicable requirements of 40 CFR Part 64.

However, 40 CFR §64.5 addresses deadlines for submittals from permittees to address the applicable requirements of 40 CFR Part 64. 40 CFR §64.5(b) states that the information required for a CAM submittal is to be submitted by a permittee as part of an application for renewal of a Title V permit for units that are not large pollutant-specific emissions units. Large pollutant-specific emission units are units with the potential to emit (taking into account control devices to the extent appropriate under the definition of the term) the applicable regulated air pollutant in an amount equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source. The PTE of the inside bake ovens for lines 2 and 3 to which CAM applies is below the major source threshold for VOC if an 81% overall VOC reduction efficiency is applied to the values listed in Table X-1. Therefore, CAM requirements will be addressed at the time of permit renewal and not with this significant permit revision.

XI. MCAPCR RULE 241 APPLICABILITY

According to MCAPCR Rule 241 §301.2, an applicant for a permit revision subject to MCAPCR Rule 210 must apply BACT to any modified stationary source if the modification causes an increase in emissions on any single day of more than 150 lbs/day or 25 tons/yr of volatile organic compounds, nitrogen oxides, sulfur dioxide or particulate matter; more than 85 lbs/day or 15 tons/yr of PM10; or more than 550 lbs/day or 100 tons/yr of carbon monoxide. BACT is only required for the sources or group of sources being modified.

Based on the analysis presented in Section VI above, application of BACT for the added equipment per Rule 241 is not required for the proposed change. However, because operation of the existing (to be replaced) catalytic oxidizer is required as a result of a BACT identification as well as in order to meet NSR non-applicability for previous facility changes, the replacement VOC control device must have capture and destruction efficiencies at least as great as the control device being replaced. Files related to the BACT analysis performed in regard to the installation of the existing oxidizer are no longer available. Therefore, it is unknown what capture and destruction efficiency values were established as BACT at that time. Permit condition 19.C.5 requires that the total VOC emissions from the inside spray coating operations associated with Production Lines 2 and 3 be reduced by at least 81% by weight. A requirement at least as stringent as this is required.

With regard to control efficiency, 81% total VOC reduction efficiency from lines 2 and 3 has been set as BACT. The permittee had previously included a capture efficiency of 87% and a control efficiency of 93.1% in emission estimates for lines 2 and 3. The permittee has since revised emission calculations to show only an overall 81% total VOC reduction efficiency for these lines.

According to MCAPCR Rule 241 §302, an applicant for a permit or permit revision for a new or modified stationary source which emits or causes an increase in emissions of up to 150 lbs/day or 25 tons/yr of volatile organic compounds, or particulate matter; up to 85 lbs/day or 15 tons/yr of PM10; or up to 550 lbs/day or 100 tons/yr of carbon monoxide shall apply RACT for each pollutant emitted from said new or modified stationary source.

As discussed above, in Section VI, an increased NO_x emission rate on a lb/Btu basis is expected for the RTO as compared to the catalytic oxidizer due to the higher combustion temperature associated with the RTO and the resulting formation of additional thermal NOx. However, because AP-42 emission factors for natural gas combustion are used for estimating the emissions from both the catalytic oxidizer and the RTO, this expected emissions increase is not reflected in the emission calculations. Nonetheless, MCESD has identified that the facility change permitted by this significant permit revision may result in an increase in emissions of NO_x consistent with the values addressed by MCAPCR Rule 241 §302. Therefore, it has been identified that RACT must be applied for the NO_x emissions associated with the new RTO.

The identification of Reasonably Available Control Technology (RACT) is performed as defined by MCAPCR Rule 100 §200.88. For facilities subject to Regulation III (Control Of Air Contaminants) of the MCAPCR, the emissions limitation of the existing source performance standard is identified as RACT. The RTO to be installed at the Rexam facility is not subject to MCAPCR Rules 313 (incinerators), 323 (combustion equipment), or other Regulation III rule. Therefore, RACT must be identified through an alternate procedure.

According to MCAPCR Rule 100 §200.88, for facilities not subject to Regulation III (Control Of Air Contaminants) of the MCAPCR, RACT is identified as the lowest emission limitation that a particular source is capable of achieving by the application of control technology that is reasonably available considering technological and economic feasibility. Such technology may previously have been applied to a similar, but not necessarily identical, source category. Such a RACT identification is made on a case-by-case basis, considering the technological feasibility and cost-effectiveness of the application of the control technology to the source category.

MCESD has identified RACT for the RTO to be installed at Rexam according to the April 13, 1999 Bay Area Air Quality Management District memorandum presented in Attachment D. This memorandum identifies RACT for thermal oxidizers as 50 ppmvd NO_x @ 15% O_2 and 350 ppmvd CO @ 15% O_2. These limits have been incorporated into Rexam's Title V Air Quality Permit at Condition 18.E.

XII. AMBIENT IMPACT ANALYSIS

Facility pollutant emissions, with the exception of NO_x, are expected to decrease as a result of this facility change. The distribution of some of the emissions associated with individual emission points will change. However, the modeling analyses previously performed for glycol ether and sulfur dioxide where carried out using Screen3, which is a highly conservative ambient impact estimation tool, and accordingly, total emissions were assumed to be emitted from one stack location. It can, therefore, safely be assumed that the changes permitted by this significant revision will not alter the findings of the original modeling analysis in which it was identified that glycol ether emissions do not exceed the AAAQGs for 2-Butoxyethanol and that SO_2 emissions do not exceed the ground level concentration limits established by SIP Rule 32 §F.

XIII. REVISIONS TO PERMIT CONDITIONS

The facility changes discussed above are covered by this significant permit revision through the following changes made to specific permit conditions:

Permit Condition 18.C.1:

Formerly stated: *The Permittee shall limit emissions of VOC from the entire facility to no more than 142 tons per any 12-month rolling period.*

Currently states: *The Permittee shall limit emissions of VOC from the entire facility to no more than 138 tons per any 12-month rolling period.*

As discussed in Section VII above, in order to avoid non-attainment NSR, Rexam has voluntarily accepted this decrease in the permitted level of VOC emissions from the facility.

Permit Condition 18.E:

Formerly stated: *Nothing – This Condition is Being Added*

Currently states: *Regenerative Thermal Oxidizer*

The Permittee shall not discharge, cause nor allow the discharge of any nitrogen oxide in excess of 50 parts per million by volume on a dry basis (ppmvd) corrected to a 15% oxygen (O2) content from the Regenerative Thermal Oxidizer. The Permittee shall also not discharge, cause nor allow the discharge of carbon monoxide in excess of 350 ppmvd corrected to a 15% O2 content from the Regenerative Thermal Oxidizer.

As discussed in Section XI above, per MCAPCR Rule 241, the new oxidizer is required to apply RACT. This condition has been added to meet the requirement.

Permit Condition 19.C.2:

Formerly stated: *The Permittee shall operate any spray booth or enclosure with forced air exhaust (i.e., the inside spray machines overspray capture system) with an average overspray removal efficiency of at least 92% by weight. No gaps, sags or holes shall be present in the filters and all exhaust must be discharged into the atmosphere.*

Currently states: *The Permittee shall operate any spray booth or enclosure with forced air exhaust such that an average overspray removal efficiency of at least 92% by weight is achieved. No gaps, sags or holes shall be present in associated filters and all exhaust must be discharged into the atmosphere.*

The permittee shall install, operate and maintain a baghouse with an average overspray removal efficiency of at least 92% by weight for the inside spray machines based on the schedule identified in this permit. Measurement of a pressure differential outside of the applicable parametric range of 1.0 to 6.0 inches of water for the baghouse shall require the Permittee to investigate and take corrective action if necessary to bring the control device into proper operation.

As discussed in Section IV above, Rexam has proposed to install a baghouse to meet the requirements of MCAPCR Rule 315 §301.1 for the inside spray machines. This condition has been revised to reflect the installation of the baghouse.

Permit Condition 19.C.4:

Formerly stated: *The Permittee shall not process beverage cans through the inside bake ovens of Production Line 2 nor Production Line 3 unless the exhaust from the Line 2 – inside bake oven (FECO Serial No. 15295) and Line 3 – inside bake oven (MOCO Serial No. 6378) is ducted in its entirety to the operating catalytic oxidizer.*

Currently states: *Prior to the completion of installation of the new regenerative thermal oxidizer and the corresponding ductwork, the Permittee shall not process beverage cans through the inside bake ovens of Production Line 2 nor Production Line 3 unless the exhaust from the Line 2 – inside bake oven (FECO Serial No. 15295) and Line 3 – inside bake oven (MOCO Serial No. 6378) is ducted in its entirety to the operating catalytic oxidizer.*

After completion of installation of the new regenerative thermal oxidizer and the corresponding ductwork, the Permittee shall not process beverage cans through the inside spray machines or the inside bake ovens of Production Line 2 or Production Line 3 unless the exhaust from the Line 2 inside spray machine and Line 2 inside bake oven (FECO Serial No. 15295) and Line 3 inside spray machine and Line 3 inside bake oven (MOCO Serial No. 6378) are ducted in their entirety to the operating regenerative thermal oxidizer.

This permit condition has been revised to reflect the change to the control device associated with the referenced equipment allowed by Significant Permit Revision S03-007. The change in venting configuration is not required to meet additional BACT requirements as discussed in Section XI above. However, due to the processing of the permit revision application submitted on July 7, 1989 for the addition of Line 3, the emissions from both Lines 2 and 3 are subject to the BACT requirements established at that time. The alterations being made to the configuration of the venting associated with both lines requires that the permit condition be revised to reflect the new configuration that must continue to meet the established BACT requirement. Because the emissions from Line 1 were not historically required to meet the same BACT requirements, additional requirement to do so with this permit revision are not prudent. However, it must be noted that without revision of the permit conditions to reflect the new control configuration for Line 1, emission calculations used to demonstrate compliance with the facility-wide annual VOC emissions limit established in Permit Condition 18.C.1 as described in Permit Condition 20.D.3, must continue to reflect zero VOC control. It must also be noted, however, that actual emissions reported for line 1 must reflect the true degree of VOC emissions from Line 1 (for future NSR considerations) and would thus include VOC control as appropriate for line 1.

Permit Condition 19.C.6:

Formerly stated: *The inlet temperature of the catalytic oxidizer shall be a minimum of 800˚F whenever Line 2 – inside bake oven 2 (FECO Serial No. 15295) or Line 3 – inside bake oven 3 (MOCO Serial No. 6378) is in use. The Permittee may operate the catalytic oxidizer at an inlet temperature less than 800˚F if it can be demonstrated through testing that the required reduction efficiency can be achieved at such lower temperature.*

Currently states: *The inlet temperature of the catalytic oxidizer shall be a minimum of 800˚F whenever Line 2 – inside bake oven 2 (FECO Serial No. 15295) or Line 3 – inside bake oven 3 (MOCO Serial No. 6378) is in use. The Permittee may operate the catalytic oxidizer at an inlet temperature less than 800˚F if it can be demonstrated through testing that the required reduction efficiency can be achieved at such lower temperature.*

The combustion chamber temperature of the regenerative thermal oxidizer shall be a minimum of 1500˚F whenever Line 2 inside spray machine, Line 3 inside spray machine, Line 2 inside bake oven (FECO Serial No. 15295) or Line 3 inside bake oven (MOCO Serial No. 6378) is in use. The Permittee may operate the regenerative thermal oxidizer at a combustion chamber temeprature less than 1500˚F if it can be demonstrated through testing that the required reduction efficiency can be achieved at such lower temperature.

This permit condition has been revised to reflect the change made to the control device associated with the referenced equipment as allowed by Significant Permit Revision S03-007.

Permit Condition 19.C.9:

Formerly stated: *Operation and Maintenance (O&M) Plan: The Permittee shall operate the catalytic*

oxidizer in accordance with the O&M Plan most recently submitted to the Control Officer for approval.

Currently states: *Operation and Maintenance (O&M) Plan: The Permittee shall operate and maintain the catalytic oxidizer, regenerative thermal oxidizer and baghouse in accordance with the requirements of the equipment specific Operations and Maintenance (O&M) Plan most recently submitted to the Control Officer for approval.*

This permit condition has been revised to reflect the pollution control device changes allowed by Significant Permit Revision S03-007.

Permit Condition 20.D.2)b:

Formerly stated: *Weekly: If the 12-month rolling total facility-wide VOC emissions for the most recent 12-month period is at least 80% of the facility-wide VOC limit required pursuant to this permit (i.e., 114 tons/12-month rolling period), the Permittee shall update records of each coating used that complies with the VOC limits in Table 1 of these permit conditions, and each coating that is not addressed by Table 1 on a weekly basis. The update shall be complete by the end of the day following the last day of each week.*

Currently states: *Weekly: If the 12-month rolling total facility-wide VOC emissions for the most recent 12-month period is at least 80% of the facility-wide VOC limit required pursuant to this permit (i.e., 110 tons/12-month rolling period), the Permittee shall update records of each coating used that complies with the VOC limits in Table 1 of these permit conditions, and each coating that is not addressed by Table 1 on a weekly basis. The update shall be complete by the end of the day following the last day of each week.*

The permit condition has been changed to reflect the voluntary reduction in the facility-wide emission limit allowed by Significant Permit Revision S03-007.

Permit Condition 20.D.3:

Formerly stated: *VOC Emissions Calculations:*
The Permittee shall calculate the 12-month rolling total facility-wide VOC emissions in accordance with the following schedule:

a) Monthly: On a monthly basis, the Permittee shall calculate the 12-month rolling total facility-wide VOC emissions by the 15th day following the last day of each month;

or

b) Weekly and Monthly: If the 12-month rolling total facility-wide VOC emissions for the most recent 12-month period is at least 80% of the facility-wide VOC limit required pursuant to this permit (i.e., 114 tons/12-month rolling period), the Permittee shall calculate the 12-month rolling total facility-wide VOC emissions on a weekly basis and a monthly basis. Weekly VOC emission calculations will provide the amount of VOC emissions for a portion of the current month and for the 11 months prior to the current month. The Permittee shall subtract the result of the weekly VOC emissions calculation from the facility-wide VOC emissions limit specified in this permit (i.e., 142 tons/12-month period) in order to determine the amount of facility-wide VOC emissions that are allowed to be emitted during the remainder of the current month without exceeding the 142-ton limit. The Permittee shall adjust production as necessary such that the facility-wide VOC emissions limit specified in this permit is not exceeded.

The overall VOC reduction efficiency used in the VOC emissions calculations shall be no

higher than 81% by weight, as required by this permit, unless otherwise approved by the Control Officer.

Currently states: *VOC Emissions Calculations:*
The Permittee shall calculate the 12-month rolling total facility-wide VOC emissions in accordance with the following schedule:

a) Monthly: On a monthly basis, the Permittee shall calculate the 12-month rolling total facility-wide VOC emissions by the 15th day following the last day of each month;

or

b) Weekly and Monthly: If the 12-month rolling total facility-wide VOC emissions for the most recent 12-month period is at least 80% of the facility-wide VOC limit required pursuant to this permit (i.e., 110 tons/12-month rolling period), the Permittee shall calculate the 12-month rolling total facility-wide VOC emissions on a weekly basis and a monthly basis. Weekly VOC emission calculations will provide the amount of VOC emissions for a portion of the current month and for the 11 months prior to the current month. The Permittee shall subtract the result of the weekly VOC emissions calculation from the facility-wide VOC emissions limit specified in this permit (i.e., 138 tons/12-month period) in order to determine the amount of facility-wide VOC emissions that are allowed to be emitted during the remainder of the current month without exceeding the 138-ton limit. The Permittee shall adjust production as necessary such that the facility-wide VOC emissions limit specified in this permit is not exceeded.

The overall VOC reduction efficiency used in the VOC emissions calculations for the Line 2 and Line 3 inside-spray coating operations shall be no higher than 81% by weight, as required by this permit, unless otherwise approved by the Control Officer. VOC emission calculations for other processes shall incorporate a zero VOC reduction efficiency.

This permit condition has been revised to reflect the equipment changes allowed by Significant Permit Revision S03-007. As discussed for Permit Condition 19.C.4, because permit conditions regarding control efficiency for Line 1 are not required to be revised, and because Rexam has not voluntarily agreed to accept such a revision, the VOC reduction efficiency for Line 1 remains zero.

Permit Condition 20.D.4:

Formerly stated: *Catalytic Oxidizer Monitoring and Recordkeeping Requirements:*

a) The Permittee shall make a permanent record of all key system operating parameters of the catalytic oxidizer, as specified in the O&M Plan.
b) The Permittee shall make a permanent record in a maintenance log of the maintenance actions taken, within 24 hours of completion of the action, for each day or period in which the O&M Plan requires that maintenance be performed.
c) The Permittee shall enter an explanation into the maintenance log for scheduled maintenance that is not performed during the period designated for such maintenance in the O&M plan.
d) The Permittee shall record the date and time period when the catalytic oxidizer is not operating. The Permittee shall also make a record indicating whether or not beverage cans were processed through the inside bake ovens associated with Production Lines 2 and 3 while the catalytic oxidizer was not operating.
e) On an annual basis, the Permittee shall send a section of the catalyst bed to the supplier or manufacturer for testing. If the supplier/manufacturer determines that the catalyst bed requires cleaning or reactivation, the Permittee shall have the catalyst bed cleaned or reactivated. The Permittee shall maintain documents from the manufacturer/supplier indicating results of catalyst testing, cleaning, and or

reactivation.

Currently states: *Catalytic Oxidizer and Regenerative Thermal Oxidizer Monitoring and Recordkeeping Requirements:*

a) Operation Indicator Monitoring

(1) The Permittee shall make a permanent record of all key system operating parameters of the catalytic oxidizer, as specified in the O&M Plan for the catalytic oxidizer, until such time that the catalytic oxidizer has been permanently replaced by the regenerative thermal oxidizer.

(2) Once the regenerative thermal oxidizer is operational, the permittee shall continuously monitor and record the combustion chamber temperature of the regenerative thermal oxidizer using a programmable logic controller or other means, to ensure operation in the acceptable range of 1500 to 1600 ˚F. For any instance in which the oxidizer operates outside the acceptable range, the permittee shall immediately identify, correct or repair any malfunction and record in a log book the cause of the problem and the corrective action initiated to remedy operation outside the acceptable range.

(3) Once the regenerative thermal oxidizer is operational, the permittee shall document the valve timing system design, indicating the logic/algorithm by which the cycle time is calculated and the normal range of the cycle time. The permittee shall document the valve timing system design at the time of performance testing and shall document any changes made to the design or operation of the system immediately following the change.

(4) Once the regenerative thermal oxidizer is operational, the permittee shall document the minimum residence time for the oxidizer. The permittee shall document the minimum residence time at the time of performance testing and shall document any changes made to the minimum residence time immediately following the change.

(5) Once the regenerative thermal oxidizer is operational, the permittee shall conduct quarterly inspections of the external structural integrity of the regenerative thermal oxidizer and corresponding ductwork to ensure proper operation, and the permittee shall conduct annual inspections of the internal structural integrity of the regenerative thermal oxidizer including the valves to ensure proper functioning. The Permittee shall log all inspections, including the date when the inspection was made, identify the oxidizer, name or initials of the person who made the inspection, and any other related information. The permittee shall immediately identify, correct or repair any malfunction and record in a log book the cause of the problem and the corrective action initiated to remedy the malfunction.

b) The Permittee shall make a permanent record in a maintenance log of the maintenance actions taken, within 24 hours of completion of the action, for each day or period in which the O&M Plan requires that maintenance be performed.

c) The Permittee shall enter an explanation into the maintenance log for scheduled maintenance that is not performed during the period designated for such maintenance in the O&M plan.

d) Prior to the completion of installation of the new regenerative thermal oxidizer and the corresponding ductwork, the Permittee shall record the date and time period when the

catalytic oxidizer is not operating. The Permittee shall also make a record indicating whether or not beverage cans were processed through the inside bake ovens associated with Production Lines 2 and 3 while the catalytic oxidizer was not operating.

After completion of installation of the new regenerative thermal oxidizer and the corresponding ductwork, the Permittee shall record the date and time period when the regenerative thermal oxidizer is not operating. The Permittee shall also make a record indicating whether or not beverage cans were processed through the inside spray machines or inside bake ovens associated with Production Lines 2 and 3 while the regenerative thermal oxidizer was not operating.

e) Prior to the completion of installation of the new regenerative thermal oxidizer and the corresponding ductwork, on an annual basis, the Permittee shall send a section of the catalyst bed to the supplier or manufacturer for testing. If the supplier/manufacturer determines that the catalyst bed requires cleaning or reactivation, the Permittee shall have the catalyst bed cleaned or reactivated. The Permittee shall maintain documents from the manufacturer/supplier indicating results of catalyst testing, cleaning, and or reactivation.

Once the catalytic oxidizer has been permanently replaced by the regenerative thermal oxidizer, the permittee is no longer required to meet the terms of this condition (Title V Permit V95-005 Condition 20.D.4.e).

This permit condition has been revised to reflect the equipment change allowed by Significant Permit Revision S03-007. Please note, the monitoring requirements were written based on draft guidance entitled "Appendix C – Monitoring Protocols for the Printing and Flexible Packaging Industries" and other verbal guidance received. The monitoring requirements identified are expected to be somewhat indicative of future CAM requirements, but in no way suggest that a CAM submittal has been received, reviewed or accepted by MCESD, and thus, the monitoring requirements do not represent CAM implementation. Instead the conditions are written to satisfy the requirements of the Title V program with regard to periodic monitoring which must be sufficient to yield reliable data for a relevant time period that are representative of the source's compliance with applicable permit conditions. Furthermore, the requirements written into the permit conditions are in addition to the requirements of the most recently approved O&M plan, (i.e., the requirements of the most recently approved O&M plan must be adhered to in addition to the requirements of these permit conditions).

Permit Condition 20.D.6:

Formerly stated:

a) On a weekly basis, the Permittee shall conduct an inspection of each overspray sleeve associated with the inside spray machines to ensure that there are no gaps, sags or holes present in the sleeves and/or filters and all exhaust is being discharged into the atmosphere.

b) The Permittee shall maintain a log of the weekly inspection indicating, at a minimum, the following information:
(1) Date of inspection;
(2) Name of person conducting inspection;
(3) Condition of the overspray sleeves;
(4) A statement indicating whether gaps, sags, or holes were present in any of the filters at the time the inspection took place; and
(5) Description of repairs, replacements, or any other corrective action taken.

Currently states:

a) Daily pressure differential readings shall be taken and recorded for the inside spray machines baghouse every day that the facility operates. The Permittee shall log all pressure differential readings, including the date when the reading was taken, identify

the baghouse, name or initials of the person who took the reading, and any other related information. The Permittee shall immediately investigate the cause of any readings outside the range of 1.0 to 6.0 inches of water for the baghouse pressure. The permittee shall immediately identify, correct or repair the problem and record in a log book the cause of the problem and the corrective action initiated to remedy the abnormal pressure differential reading.

If the frequency of measurement of a pressure differential outside the applicable pressure differential range of 1.0 to 6.0 inches of water or other information indicate that the baghouse is not being operated in accordance with the O&M plan most recently approved by the Control Officer, the Department may require the Permittee to submit a Corrective Action Plan (CAP).

b) The Permittee shall maintain a log of the weekly inspection indicating, at a minimum, the following information:
(1) Date of inspection;
(2) Name of person conducting inspection;
(3) Condition of the baghouse filter bags and ductwork;
(4) A statement indicating whether gaps, sags, or holes were present in any of the filter bags or ductwork at the time the inspection took place; and
(5) Description of repairs, replacements, or any other corrective action taken.

As discussed in Section IV above, Rexam has proposed to install a baghouse to meet the requirements of MCAPCR Rule 315 §301.1 for the inside spray machines. This condition has been revised to reflect the installation of the baghouse and the corresponding monitoring requirements.

Permit Condition 21.A.4)e:

Formerly stated: *A summary of records indicating each instance that the catalytic oxidizer was not operating, along with records indicating whether or not beverage cans were being processed through the inside bake ovens of Production Lines 2 and 3 while the catalytic oxidizer was not operating. If there were no instances when the catalytic oxidizer was not operating, the Permittee shall include a statement indicating such fact in the semiannual monitoring report.*

Currently states: *For reports covering periods prior to the completion of installation of the new regenerative thermal oxidizer and the corresponding ductwork, a summary of records indicating each instance that the catalytic oxidizer was not operating, along with records indicating whether or not beverage cans were being processed through the inside bake ovens of Production Lines 2 and 3 while the catalytic oxidizer was not operating. If there were no instances when the catalytic oxidizer was not operating, the Permittee shall include a statement indicating such fact in the semiannual monitoring report.*

For reports covering periods after completion of installation of the new regenerative thermal oxidizer and the corresponding ductwork, a summary of records indicating each instance that the regenerative thermal oxidizer was not operating, along with records indicating whether or not beverage cans were being processed through the inside spray machines and inside bake ovens of Production Lines 2 and 3 while the regenerative thermal oxidizer was not operating. If there were no instances when the regenerative thermal oxidizer was not operating, the Permittee shall include a statement indicating such fact in the semiannual monitoring report.

This permit condition has been revised to reflect the equipment changes allowed by Significant Permit Revision S03-007.

Permit Condition 21.A.4)f:

Formerly stated: *A copy of the maintenance log for the catalytic oxidizer and documentation from the catalyst supplier/manufacturer regarding testing, cleaning, and/or reactivation of the catalyst bed.*

Currently states: *For reports covering periods prior to the completion of installation of the new regenerative thermal oxidizer and the corresponding ductwork, a copy of the maintenance log for the catalytic oxidizer and documentation from the catalyst supplier/manufacturer regarding testing, cleaning, and/or reactivation of the catalyst bed.*

For reports covering periods after completion of installation of the new regenerative thermal oxidizer and the corresponding ductwork, a copy of the maintenance log for the regenerative thermal oxidizer.

This permit condition has been revised to reflect the equipment changes allowed by Significant Permit Revision S03-007.

Permit Condition 21.A.7:

Formerly stated: *Catalytic Oxidizer*

a) The Permittee shall report the date and time period when the catalytic oxidizer is not operating. The Permittee shall also make a record indicating whether or not beverage cans were processed through the inside bake ovens associated with Production Lines 2 and 3 while the catalytic oxidizer was not operating.
b) The date and time the operation of the catalytic oxidizer returned to normal operation.
c) A description of the corrective action taken to correct the problem.

Currently states: *For reports covering periods prior to the completion of installation of the new regenerative thermal oxidizer and the corresponding ductwork:*

a) The Permittee shall report the date and time period when the catalytic oxidizer is not operating. The Permittee shall also make a record indicating whether or not beverage cans were processed through the inside bake ovens associated with Production Lines 2 and 3 while the catalytic oxidizer was not operating.
b) The date and time the operation of the catalytic oxidizer returned to normal operation.
c) A description of the corrective action taken to correct the problem.

For reports covering periods after completion of installation of the new regenerative thermal oxidizer and the corresponding ductwork:

a) The Permittee shall report the date and time period when the regenerative thermal oxidizer is not operating. The Permittee shall also include in the report whether or not beverage cans were processed through the inside spray machines and inside bake ovens associated with Production Lines 2 and 3 while the regenerative thermal oxidizer was not operating.
b) The date and time the operation of the regenerative thermal oxidizer returned to normal operation.
c) A description of the corrective action taken to correct the problem.

This permit condition has been revised to reflect the equipment changes allowed by Significant Permit Revision S03-007.

Permit Condition 22.A {through Condition 22.A.2)a}:

Formerly stated: *Catalytic Oxidizer:*
The Permittee shall conduct a performance test on the catalytic oxidizer (HIRT Serial No. 611B1089) within 180 days after issuance of this permit. Testing shall be conducted in order to determine the VOC destruction efficiency of the catalytic oxidizer and the VOC

capture efficiency of the catalytic oxidizer. Capture efficiency shall be determined with respect to the VOC emissions from the inside spray coating operations associated with Production Lines 2 and 3, including the inside spray machines, flashoff areas, and the inside bake ovens. Testing shall verify that the Permittee is capable of operating the VOC emission control system at an overall VOC reduction efficiency of at least 81%, as required in these permit conditions. In addition, the permittee shall measure the concentration of nitrogen oxide (NOx) and carbon monoxide (CO) in the exhaust stream from the catalytic oxidizer for emission factor verification.

1) The Permittee shall conduct testing under both of the following operating scenarios:

a) Testing shall occur while Production Lines 2 and 3 are operating and exhaust from the inside bake ovens from both Lines 2 (FECO Serial No. 15295) and 3 (MOCO Serial No. 6378) is being ducted to the catalytic oxidizer.

b) Testing shall occur while Production Line 3 is operating and the exhaust from the inside bake oven from Line 3 (MOCO Serial No. 6378) is being ducted to the catalytic oxidizer. During this test, Production Line 2 shall not be in operation.

2) Testing Conditions:
a) Performance tests shall be conducted while operating the catalytic oxidizer in accordance with the O&M Plan.

Currently states: *Catalytic Oxidizer and Regenerative Thermal Oxidizer:*
The Permittee shall conduct a performance test on the catalytic oxidizer (HIRT Serial No. 611B1089) within 180 days after issuance of the original Title V permit. The Permittee shall conduct a performance test on the regenerative thermal oxidizer within 60 days after the regenerative thermal oxidizer has achieved the capability to operate on a sustained basis but no later than 180 days after initial start-up. Testing for both oxidizers shall be conducted in order to determine the VOC destruction efficiency of the oxidizer and the VOC capture efficiency of the oxidizer. Capture efficiency shall be determined with respect to the VOC emissions from the inside spray coating operations associated with Production Lines 2 and 3, including the inside spray machines, flashoff areas, and the inside bake ovens. Testing shall verify that the Permittee is capable of operating the VOC emission control system at an overall VOC reduction efficiency of at least 81%, as required in these permit conditions. In addition, the permittee shall measure the concentration of nitrogen oxide (NOx) and carbon monoxide (CO) in the exhaust stream from the catalytic oxidizer for emission factor verification, and from the regenerative thermal oxidizer for demonstration of compliance with the RACT requirements of these Permit Conditions, as well as emission factor verification.

1) The Permittee shall conduct testing for both oxidizers under both of the following operating scenarios:

a) Testing scenario 1 shall occur while Production Lines 2 and 3 are operating and exhaust from the inside bake ovens from both Lines 2 (FECO Serial No. 15295) and 3 (MOCO Serial No. 6378) is being ducted to the oxidizer being tested. During the testing of the regenerative thermal oxidizer, Production Line 1 shall not be in operation (i.e., not processing cans) and all exhaust dampers associated with Production Line 1 equipment must be in their normal operating positions for periods when Production Line 1 is not processing cans.

b) Testing scenario 2 for each oxidizer is as follows:
(1) Catalytic Oxidizer: Testing shall occur while Production Line 3 is operating and the exhaust from the inside bake oven from Line 3 (MOCO Serial No. 6378) is being ducted to the catalytic oxidizer. During the testing of the

catalytic oxidizer, Production Line 2 shall not be in operation (i.e., not processing cans). All exhaust dampers associated with Production Line 2 must be in their normal operating positions for periods when Production Line 2 is not processing cans. The natural gas firing status of the Line 2 inside bake oven must be maintained at the normal operating level for periods when production line 2 is not processing cans.

(2) Regenerative Thermal Oxidizer: Testing shall occur while Production Line 3 is operating and the exhaust from the inside bake oven from Line 3 (MOCO Serial No. 6378) is being ducted to the regenerative thermal oxidizer. During the testing of the regenerative thermal oxidizer, Production Lines 1 and 2 shall not be in operation (i.e. not processing cans). All exhaust dampers associated with Production Lines 1 and 2 must be in their normal operating positions for periods when Production Lines 1 and 2 are not processing cans. The natural gas firing status of the Line 2 inside bake oven must be maintained at the normal operating level for periods when Production Line 2 is not processing cans.

2) Testing Conditions:

a) Performance tests for both oxidizers shall be conducted while operating the oxidizer in accordance with these Permit Conditions and the most recently approved O&M Plan for that oxidizer.

This permit condition has been revised to be consistent with the equipment changes allowed by Significant Permit Revision S03-007 and does not reflect the fact that testing for the catalytic oxidizer may be concluded by the time of permit revision issuance. Due to the fact that the Line 1 inside spray coating machine will be ducted to the regenerative thermal oxidizer but will not be subject to the VOC emissions reduction requirements, emissions from this line can not be present during the testing associated with the emissions from Lines 2 and 3. Thus, the statement requiring that Line 1 not be operating during testing has been added to this condition. Language has also been added to clarify the exhaust configuration during testing. The testing is intended to establish the efficiencies (capture and destruction) of the oxidizers operating under the conditions that would normally occur at the facility when lines 1 and 2 are not processing beverage cans.

Permit Condition 23.A:

Formerly stated: *In order to achieve compliance with the requirement that the overspray removal efficiency at the inside spray machines be at least 92% by weight, the Permittee shall install overspray removal filters with the required removal efficiency at the exhaust side of the inside spray machine banks in accordance with the following compliance schedule.*

Milestones	***Estimated Target Date***	***Final Completion Date***
Prepare project scope.	*09-05-2003*	*Complete*
Prepare and submit permit revision application for filters.	*11-30-2003*	*11-24-2003*
Permit Modification Issuance	*8-30-2004*	*n/a*
Purchase the necessary capital equipment	*9-30-2004*	*No later than 30 days after permit modification issuance*
Construction and the Installation of filters.	*12-30-04*	*No later than 120 days after permit modification issuance*
Final normal operation of filters.	*2-28-2005*	*No later than 180 days after permit modification issuance*

Currently states: *In order to achieve compliance with the requirement that the overspray removal efficiency at the inside spray machines be at least 92% by weight, the Permittee shall install ductwork venting to a baghouse with the required removal efficiency at the exhaust side of the inside spray machine banks in accordance with the following compliance schedule.*

Milestones	***Estimated Target Date***	***Final Completion Date***
Prepare project scope.	*09-05-2003*	*Complete*
Prepare and submit permit revision application for ductwork and baghouse.	*11-30-2003*	*11-24-2003*
Permit Revision Issuance	*8-30-2004*	*Date of Issuance of this Revision*
Purchase the necessary capital equipment	*9-30-2004*	*No later than 30 days after issuance of this permit revision*
Construction and the Installation of ductwork and baghouse.	*12-30-04*	*No later than 120 days after issuance of this permit revision*
Final normal operation of ductwork and baghouse.	*2-28-2005*	*No later than 180 days after issuance of this permit revision*

This permit condition has been revised to reflect the equipment changes allowed by Significant Permit Revision S03-007.

Permit Condition 23.C:

Formerly stated: *Nothing – This Condition is Being Added*

Currently states: *The Permittee shall submit an application for a significant revision to this permit not less than 18 months prior to the compliance date specified in 40 CFR Part 63 Subpart KKKK. The significant permit revision application shall identify in detail the options the permittee will utilize to demonstrate compliance with the applicable provisions of 40 CFR Part 63 Subpart KKKK.*

This condition has been added consistent with MCESD policy for incorporation of MACT standards with delayed compliance dates into issued operating permits.

Appendix A – List of Equipment:

The list has been updated and amended as appropriate to reflect the changes allowed by Significant Permit Revision S03-007.

Attachment A: Detailed Pre-change Emission Calculations

Table A-1
Facility Equipment Capacity

REXAM Bevarage Can Company

Phoenix, Arizona

Permit V95005 - Significant Revision

Description (Process ID)	Value	Units	Comment
Cupper Capacity (CUP)	Unknown	N/A	Assumed to be limited by Printer Capacity on Annual Basis
Bodymaker Capacity (BDY)	Unknown	N/A	Assumed to be limited by Printer Capacity on Annual Basis
Trimmer Capacity (TRM)	Unknown	N/A	Assumed to be limited by Printer Capacity on Annual Basis
Washer Capacity (WSH)	Unknown	N/A	Assumed to be limited by Printer Capacity on Annual Basis
Washer Boiler Heat Rating (WSHBOIL)	3.50	MMBtu/hr	As listed in Title V Technical Support Document
Washed Object Dryer 1 Heat Rating (WSHHTR1)	3.60	MMBtu/hr	As listed in Title V Technical Support Document
Washed Object Dryer 2 Heat Rating (WSHHTR2)	3.20	MMBtu/hr	As listed in Title V Technical Support Document
Bright Palletizer Capacity (BRTPLT)	Unknown	N/A	Assumed to be limited by Printer Capacity on Annual Basis
Printer Line 1 Capacity (PRT1)	1100	cans/min	As listed in Rexam Emission Calculations
Printer Line 2 Capacity (PRT2)	1380	cans/min	As listed in Rexam Emission Calculations
Printer Line 3 Capacity (PRT3)	1400	cans/min	As listed in Rexam Emission Calculations
Pin Oven 1 Heat Rating (PIN1)	4.00	MMBtu/hr	As listed in Title V Technical Support Document
Pin Oven 2 Heat Rating (PIN2)	2.50	MMBtu/hr	As listed in Title V Technical Support Document
Pin Oven 3 Heat Rating (PIN3)	2.50	MMBtu/hr	As listed in Title V Technical Support Document
Inside Spray Machine Line 1 Capacity (ISM1)	1100	cans/min	As listed in Rexam Emission Calculations
Inside Spray Machine Line 2 Capacity (ISM2)	1380	cans/min	As listed in Rexam Emission Calculations
Inside Spray Machine Line 3 Capacity (ISM3)	1400	cans/min	As listed in Rexam Emission Calculations
Inside Bake Oven 1 Heat Rating (IBO1)	3.00	MMBtu/hr	As listed in Title V Technical Support Document
Inside Bake Oven 2 Heat Rating (IBO2)	5.20	MMBtu/hr	As listed in Title V Technical Support Document
Inside Bake Oven 3 Heat Rating (IBO3)	5.20	MMBtu/hr	As listed in Title V Technical Support Document
Oxidizer Heat Rating (OXDZR)	9.00	MMBtu/hr	As listed in Title V Technical Support Document
Oxidizer Control Efficiency (OXDZR)	93.10%	%	Based on Emission Calculations
Waxing Station Capacity (WAX)	Unknown	N/A	Assumed to be limited by Printer Capacity on Annual Basis
Necking Capacity (NCK)	Unknown	N/A	Assumed to be limited by Printer Capacity on Annual Basis
Product Palletizer Capacity (PRDPLT)	Unknown	N/A	Assumed to be limited by Printer Capacity on Annual Basis

Table A-2
Facility Emissions Summary
REXAM Bevarage Can Company

Phoenix, Arizona

Permit V95005 - Significant Revision

Process ID	Stack ID	Control Device	Hourly Emissions (lb/hr)						Annual Emissions (ton/yr)					
			NO_x	CO	SO_2	PM	VOC	HAP	NO_x	CO	SO_2	PM	VOC	HAP
CUP	None	None	Trivial Fugitive Emissions of VOC from Lubricant											
BDY	OBP-1	OBP-1				0.06	0.004					0.27	0.017	
	OBP-2	OBP-2				0.06	0.004					0.27	0.017	
TRM	None	None												
WSH	WSH	None						No Data						0.013
WSHBOIL	WSHBOIL	None	0.33	0.28	0.00	0.03	0.02	0.01	1.46	1.23	0.01	0.11	0.08	0.03
WSHHTR1	S008	None	0.34	0.29	0.00	0.03	0.02	0.01	1.50	1.26	0.01	0.11	0.08	0.03
WSHHTR2	S009	None	0.30	0.26	0.00	0.02	0.02	0.01	1.33	1.12	0.01	0.10	0.07	0.03
PRT1	S014	None					0.44	0.30					1.94	1.31
PRT2	S014	None					0.53	0.36					2.31	1.56
PRT3	S014	None					0.54	0.37					2.38	1.61
PIN1	S001	None	0.38	0.32	0.00	0.03	5.22	3.26	1.67	1.40	0.01	0.13	22.88	14.28
PIN2	S003	None	0.24	0.20	0.00	0.02	6.24	3.89	1.04	0.88	0.01	0.08	27.32	17.05
PIN3	S005	None	0.24	0.20	0.00	0.02	6.41	4.00	1.04	0.88	0.01	0.08	28.06	17.52
ISM1	S011/FUG	None				0.15	1.70	0.79				0.64	7.46	3.44
ISM2	S012/FUG	None				0.17	2.04	0.94				0.76	8.94	4.12
ISM3	S013/FUG	None				0.18	2.08	0.96				0.78	9.13	4.21
IBO1	S002	None	0.29	0.24	0.00	0.02	11.42	5.26	1.25	1.05	0.01	0.10	50.02	23.05
IBO2	S006/S007	CATOX	0.50	0.42	0.00	0.04	0.97	0.44	2.17	1.82	0.01	0.16	4.25	1.94
IBO3	S006/S007	CATOX	0.50	0.42	0.00	0.04	0.99	0.45	2.17	1.82	0.01	0.16	4.33	1.98
OXDZR	S004	N/A	0.86	0.72	0.01	0.07	0.05	0.02	3.75	3.15	0.02	0.29	0.21	0.07
LN1FUG	FUG	None					0.78	0.61					3.40	2.68
LN2FUG	FUG	None					0.81	0.64					3.56	2.81
LN3FUG	FUG	None					0.85	0.67					3.73	2.94
WAX	None	None												
NCK	None	None												
Total Facility Emissions[1]			**3.97**	**3.34**	**0.02**	**0.92**	**41.14**	**22.98**	**17.39**	**14.61**	**0.10**	**4.04**	**180.20**	**100.68**

[1] The discrepancy in total annual PM emissions of 4.04 tpy as compared to the 3.5 tpy reported in the Title V permit TSD is believed to be due to the omission of PM emissions from Bodymaking in the Title V permit TSD count.

The discrepancy in hourly and annual VOC emissions is due to the use of an 80% overall VOC reduction efficiency in the Title V permit TSD for lines 2 and 3 which has been revised to 81% to be consistent with the permit requirements, and updates to the cleaner usage values and formed formaldehyde emissions based on data provided in responses from Rexam to information requests (these changes also affects HAP emission estimates).

Table A-3
Calculation of Maximum Material Usage

REXAM Bevarage Can Company

Phoenix, Arizona

Permit V95005 - Significant Revision

Production Area	2001 Can Production[1] *(cans/yr)*	Fraction of 2001 Production[2] *(%)*	Maximum Production[1] *(cans/min)*	Maximum Production[3] *(cans/yr)*	Fraction of Maximum[4] *(%)*
Line 1	3.82E+08	29.28%	1,100	5.78E+08	28.35%
Line 2	4.57E+08	35.04%	1,380	7.25E+08	35.57%
Line 3	4.65E+08	35.68%	1,400	7.36E+08	36.08%
Total	1.30E+09	100.00%	3,880	2.04E+09	100.00%

Footnotes:

[1] Data Provided by Rexam

[2] Fraction of 2001 Production = Individual Line 2001 Can Production / Total 2001 Can Production

[3] Maximum Production (cans/hr) = Maximum Production (cans/min) * 60 min/hr * 8760 (hr/yr)

[4] Fraction of Maximum = Individual Line Maximum Production / Total Maximum Production

Material	Associated Process IDs	Name	2001 Total Usage[1] (gal)	2001 Usage by Line[1] (gal)			Density[1] (lb/gal)	2001 Total Usage[5] (lb)	2001 Usage by Line[5] (lb)			Potential Usage[6] (lb)	Potential Usage by Line[6] (lb)		
				Line 1	Line 2	Line 3			Line 1	Line 2	Line 3		Line 1	Line 2	Line 3
I/S SPRAY	ISM, IBO 1-3	M4020W16M	63,172	18360.00	21121.00	23691.00	8.56	540,752	157,162	180,796	202,795	845,534	245,742	282,697	317,095
I/S SPRAY	ISM, IBO 1-3	M4020W20M	162,733	47,661	57,959	57,113	8.54	1,389,740	407,025	494,970	487,745	2,173,033	636,435	773,948	762,651
VARNISH	PRT, PIN 1-3	CC3625XLV	76,137	22,256	26,567	27,315	8.75	666,199	194,740	232,461	239,006	1,041,686	304,501	363,482	373,716
VARNISH	PRT, PIN 1-3	CC3655	2,065	608	729	747	9	18,585	5,472	6,561	6,723	29,060	8,556	10,259	10,512
INKS	PRT, PIN 1-3	INX	No Data	No Data	No Data	No Data	No Data	119,079	34,834	41,610	42,634	186,195	54,467	65,062	66,664
CLEANER[7]	???	Mirachem 500	110	35	37	38	8.34	917	292	306	320	1,434	456	478	500
CLEANER[7]	???	Glycol Ether	No Data	No Data	No Data	No Data	No Data	10,790	3,432	3,597	3,761	16,872	5,366	5,624	5,881
CLEANER[7]	???	Isopropyl Alcohol	No Data	No Data	No Data	No Data	No Data	2,840	903	947	990	4,441	1,412	1,480	1,548

Footnotes:

[1] Data Provided by Rexam

[5] 2001 Usage (lb) = 2001 Total Usage (gal) * Density (lb/gal) ; Except where No Data is provided, the values are provided by Rexam

[6] Potential Usage (lb) = [2001 Usage (lb)] * [Maximum Production (cans/yr)] / [2001 Can Production (cans/yr)]

[7] The "Usage by Line" values have been updated based on data provided in the response dated July 8, 2004 from Rexam.

Table A-4

Particulate Matter Emissions due to Inside Spray Operations

REXAM Bevarage Can Company

Phoenix, Arizona

Permit V95005 - Significant Revision

Material	Name	Solids Content[1] *(%)*	Process ID	Potential Annual Usage[2] *(lb/yr)*	Overspray Percent[3] *(%)*	Control Efficiency[3] *(%)*	Potential Hourly Emissions[4] *(lb/hr)*	Potential Annual Emissions[5] *(tpy)*
I/S SPRAY	M4020W16M	24.60%	ISM1	245,742	6%	90%	0.04	0.18
			ISM2	282,697	6%	90%	0.05	0.21
			ISM3	317,095	6%	90%	0.05	0.23
I/S SPRAY	M4020W20M	23.90%	ISM1	636,435	6%	90%	0.10	0.46
			ISM2	773,948	6%	90%	0.13	0.55
			ISM3	762,651	6%	90%	0.12	0.55
						Totals:	**0.50**	**2.18**

Footnotes:

[1] Data Provided by Rexam

[2] As calculated in the "Calculation of Maximum Material Usage" table.

[3] As assumed by Rexam

[4] Potential Hourly Emissions = Potential Annual Emissions (tpy) * 2000 (lb/ton) / 8760 (hr/yr)

[5] Potential Annual Emissions =
Potential Annual Usage (lb/yr) * Solids Content (%) * Overspray Percent (%) * [1 - Control Efficiency (%)] / 2000 (lb/ton)

Table A-5

Particulate Matter and VOC Emissions Associated with Oil Mist Collection System

REXAM Bevarage Can Company

Phoenix, Arizona

Permit V95005 - Significant Revision

Process ID	Stack ID	Annual Operating Hours *(hr)*	Potential Hourly PM Emissions[1] *(lb/hr)*	Potential Annual PM Emissions[2] *(tpy)*	VOC Content[1] *(%)*	Potential Hourly VOC Emissions[3] *(lb/hr)*	Potential Annual VOC Emissions[4] *(tpy)*
BDY	OBP-1	8760	0.061	0.27	6.50%	0.004	0.017
	OBP-2	8760	0.061	0.27	6.50%	0.004	0.017
Total			**0.12**	**0.53**		**0.008**	**0.035**

Footnotes:

[1] Data Provided by Rexam

[2] Potential Annual PM Emissions (tpy) = Potential Hourly PM Emissions (lb/hr) * Annual Operating Hours (hr) / 2000 (lb/ton)

[3] Potential Hourly VOC Emissions (lb/hr) = Potential Hourly PM Emissions (lb/hr) * VOC Content (%)

[4] Potential Annual VOC Emissions (lb/hr) = Potential Annual PM Emissions (lb/hr) * VOC Content (%)

Table A-6

Hydrofluoric Acid Emissions Due to Washing

REXAM Bevarage Can Company

Phoenix, Arizona

Permit V95005 - Significant Revision

Process ID	Wash Solution Usage *(lb/yr)*	HF Concentration *(%)*	HF Usage[1] *(lb/yr)*	HF Emission Factor[1] *(lb/lb used)*	Annual Emissions[2] *(lb/yr)*	Annual Emissions[3] *(ton/yr)*
WSH	123463.9	21.00%	25927	0.001	25.9	0.013

Footnotes:

[1] Data Provided by Rexam

[2] Annual Emissions (lb/yr) = HF Usage (lb/yr) * HF Emission Factor (lb/lb used)

[3] Annual Emissions (ton/yr) = Annual Emissions (lb/yr) / 2000 (lb/yr)

Table A-7

VOC Emissions due to Printing
REXAM Bevarage Can Company
Phoenix, Arizona
Permit V95005 - Significant Revision

Material	Name	Material Composition[1]				Process ID	Potential Annual Usage by Line[2]	Process ID Fraction of Usage[1]	Potential Annual Usage by ID[3]	Potential Hourly Emissions[4]				Potential Annual Emissions[5]			
		VOC (%)	Formald-eyhde (%)	Glycol Ether (%)	Chromium Compounds (%)		(lb/yr)	(%)	(lb/yr)	VOC (lb/hr)	Formald-eyhde (lb/hr)	Glycol Ether (lb/hr)	Chromium Compounds (lb/hr)	VOC (tpy)	Formald-eyhde (tpy)	Glycol Ether (tpy)	Chromium Compounds (tpy)
VARNISH	CC3625XLV	11.20%	0.00%	7.20%	0.00%	PRT1	304,501	10.00%	30,450	0.39	0.00	0.25	0.00	1.71	0.00	1.10	0.00
						PIN1		90.00%	274,050	3.50	0.00	2.25	0.00	15.35	0.00	9.87	0.00
						PRT2	363,482	10.00%	36,348	0.46	0.00	0.30	0.00	2.04	0.00	1.31	0.00
						PIN2		90.00%	327,134	4.18	0.00	2.69	0.00	18.32	0.00	11.78	0.00
						PRT3	373,716	10.00%	37,372	0.48	0.00	0.31	0.00	2.09	0.00	1.35	0.00
						PIN3		90.00%	336,345	4.30	0.00	2.76	0.00	18.84	0.00	12.11	0.00
VARNISH	CC3655	14.90%	0.00%	10.70%	0.00%	PRT1	8,556	10.00%	856	0.01	0.00	0.01	0.00	0.06	0.00	0.05	0.00
						PIN1		90.00%	7,701	0.13	0.00	0.09	0.00	0.57	0.00	0.41	0.00
						PRT2	10,259	10.00%	1,026	0.02	0.00	0.01	0.00	0.08	0.00	0.05	0.00
						PIN2		90.00%	9,233	0.16	0.00	0.11	0.00	0.69	0.00	0.49	0.00
						PRT3	10,512	10.00%	1,051	0.02	0.00	0.01	0.00	0.08	0.00	0.06	0.00
						PIN3		90.00%	9,461	0.16	0.00	0.12	0.00	0.70	0.00	0.51	0.00
INKS	INX	20.00%	0.01%	9.11%	0.02%	PRT1	54,467	0.00%	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
						PIN1		100.00%	54,467	1.24	0.00	0.57	0.00	5.45	0.00	2.48	0.01
						PRT2	65,062	0.00%	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
						PIN2		100.00%	65,062	1.49	0.00	0.68	0.00	6.51	0.00	2.96	0.01
						PRT3	66,664	0.00%	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
						PIN3		100.00%	66,664	1.52	0.00	0.69	0.00	6.67	0.00	3.04	0.01
									Totals:	**18.07**	**0.00**	**10.86**	**0.00**	**79.14**	**0.01**	**47.55**	**0.02**

Footnotes:

[1] Data Provided by Rexam

[2] As calculated in the "Calculation of Maximum Material Usage" table.

[3] Potential Annual Usage by ID (lb/yr) = Potential Annual Usage by Line (lb/yr) * Process ID Fraction of Usage (%)

[4] Potential Hourly Emissions (lb/hr) = Potential Annual Emissions (tpy) / 8760 (hr/yr) * 2000 (lb/ton)

[5] Potential Annual Emissions (tpy) = Potential Annual Usage by ID (lb/yr) * Pollutant Specific Material Composition (%) / 2000 (lb/ton)

Table A-7a

Formed Formaldehyde (HCHO) Emissions due to Printing
REXAM Bevarage Can Company
Phoenix, Arizona
Permit V95005 - Significant Revision

Material	Name	Emission Factor[1] *(lb HCHO / lb Solids)*	Solids Content[2] *(lb Solids / lb Material)*	Emission Factor[3] *(lb HCHO / lb Material)*	Process ID	Potential Annual Usage by Line[4] *(lb/yr)*	Process ID Fraction of Usage[2] (%)	Potential Annual Usage by ID[5] *(lb/yr)*	Potential Hourly Formaldehyde Emissions[6] *(lb/hr)*	Potential Annual Formaldehyde Emissions[7] *(tpy)*
VARNISH	CC3625XLV	0.028	0.38	0.011	PRT1	304,501	10.00%	30,450	0.04	0.16
					PIN1		90.00%	274,050	0.33	1.46
					PRT2	363,482	10.00%	36,348	0.04	0.19
					PIN2		90.00%	327,134	0.40	1.74
					PRT3	373,716	10.00%	37,372	0.05	0.20
					PIN3		90.00%	336,345	0.41	1.79
VARNISH	CC3655	0.028	0.52	0.014	PRT1	8,556	10.00%	856	0.00	0.01
					PIN1		90.00%	7,701	0.01	0.06
					PRT2	10,259	10.00%	1,026	0.00	0.01
					PIN2		90.00%	9,233	0.02	0.07
					PRT3	10,512	10.00%	1,051	0.00	0.01
					PIN3		90.00%	9,461	0.02	0.07
								Totals:	**1.31**	**5.75**

Footnotes:

[1] Emission Factor Provided by Rexam based on Internal Engineering Estimate from Source Testing at Similar Facilities

[2] Data Provided by Rexam

[3] Emission Factor (lb HCHO / lb material) = Emission Factor (lb HCHO / lb solid) * Solids Content (lb solids / lb material)

[4] As calculated in the "Calculation of Maximum Material Usage" table.

[5] Potential Annual Usage by ID (lb/yr) = Potential Annual Usage by Line (lb/yr) * Process ID Fraction of Usage (%)

[6] Potential Hourly Emissions (lb/hr) = Potential Annual Emissions (tpy) / 8760 (hr/yr) * 2000 (lb/ton)

[7] Potential Annual Emissions (tpy) = Potential Annual Usage by ID (lb/yr) * Pollutant Specific Material Composition (%) / 2000 (lb/ton)

Table A-8

VOC Emissions due to Inside Spray Operations
REXAM Bevarage Can Company
Phoenix, Arizona
Permit V95005 - Significant Revision

Material	Name	Material Composition[1]				Process ID	Potential Annual Usage by Line[2] (lb/yr)	Process ID Fraction of Usage[1] (%)	Potential Annual Usage by ID[3] (lb/yr)	Control Efficiency[1] (%)	Potential Hourly Emissions[4]				Potential Annual Emi		
		VOC (%)	Formald-eyhde (%)	Glycol Ether (%)	Chromium Compounds (%)						VOC (lb/hr)	Formald-eyhde (lb/hr)	Glycol Ether (lb/hr)	Chromium Compounds (lb/hr)	VOC (tpy)	Formald-eyhde (tpy)	Glycol Ether (tpy)
I/S SPRAY	M4020W16M	12.80%	0.00%	6.00%	0.00%	ISM1	245,742	13.00%	31,946	0%	0.47	0.00	0.22	0.00	2.04	0.00	0.96
						IBO1		87.00%	213,796	0%	3.12	0.00	1.46	0.00	13.68	0.00	6.41
						ISM2	282,697	13.00%	36,751	0%	0.54	0.00	0.25	0.00	2.35	0.00	1.10
						IBO2		87.00%	245,946	93%	0.25	0.00	0.12	0.00	1.09	0.00	0.51
						ISM3	317,095	13.00%	41,222	0%	0.60	0.00	0.28	0.00	2.64	0.00	1.24
						IBO3		87.00%	275,873	93%	0.28	0.00	0.13	0.00	1.22	0.00	0.57
I/S SPRAY	M4020W20M	13.10%	0.00%	6.00%	0.00%	ISM1	636,435	13.00%	82,737	0%	1.24	0.00	0.57	0.00	5.42	0.00	2.48
						IBO1		87.00%	553,698	0%	8.28	0.00	3.79	0.00	36.27	0.00	16.61
						ISM2	773,948	13.00%	100,613	0%	1.50	0.00	0.69	0.00	6.59	0.00	3.02
						IBO2		87.00%	673,335	93%	0.69	0.00	0.32	0.00	3.04	0.00	1.39
						ISM3	762,651	13.00%	99,145	0%	1.48	0.00	0.68	0.00	6.49	0.00	2.97
						IBO3		87.00%	663,506	93%	0.68	0.00	0.31	0.00	3.00	0.00	1.37
										Totals:	**19.14**	**0.00**	**8.82**	**0.00**	**83.83**	**0.00**	**38.64**

Footnotes:

[1] Data Provided by Rexam

[2] As calculated in the "Calculation of Maximum Material Usage" table.

[3] Potential Annual Usage by ID (lb/yr) = Potential Annual Usage by Line (lb/yr) * Process ID Fraction of Usage (%)

[4] Potential Hourly Emissions (lb/hr) = Potential Annual Emissions (tpy) / 8760 (hr/yr) * 2000 (lb/ton)

[5] Potential Annual Emissions (tpy) = Potential Annual Usage by ID (lb/yr) * Pollutant Specific Material Composition (%) / 2000 (lb/ton)

Table A-9

VOC Emissions due to Cleaner Usage
REXAM Bevarage Can Company
Phoenix, Arizona
Permit V95005 - Significant Revision

Material	Name	Material Composition[1]				Process ID	Potential Annual Usage by Line[2]	FIN Fraction of Usage[1]	Potential Annual Usage by ID[3]	Potential Hourly Emissions[4]				Potential Annual Emissions[5]			
		VOC (%)	Formald-eyhde (%)	Glycol Ether (%)	Chromium Compounds (%)		(lb/yr)	(%)	(lb/yr)	VOC (lb/hr)	Formald-eyhde (lb/hr)	Glycol Ether (lb/hr)	Chromium Compounds (lb/hr)	VOC (tpy)	Formald-eyhde (tpy)	Glycol Ether (tpy)	Chromium Compounds (tpy)
CLEANER	Mirachem 500	5.10%	0.00%	0.00%	0.00%	LN1FUG	456	100.00%	456	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
						LN2FUG	478	100.00%	478	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
						LN3FUG	500	100.00%	500	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
CLEANER	Glycol Ether	100.0%	0.00%	100.0%	0.00%	LN1FUG	5,366	100.00%	5,366	0.61	0.00	0.61	0.00	2.68	0.00	2.68	0.00
						LN2FUG	5,624	100.00%	5,624	0.64	0.00	0.64	0.00	2.81	0.00	2.81	0.00
						LN3FUG	5,881	100.00%	5,881	0.67	0.00	0.67	0.00	2.94	0.00	2.94	0.00
CLEANER	Isopropyl Alcohol	100.0%	0.00%	0.00%	0.00%	LN1FUG	1,412	100.00%	1,412	0.16	0.00	0.00	0.00	0.71	0.00	0.00	0.00
						LN2FUG	1,480	100.00%	1,480	0.17	0.00	0.00	0.00	0.74	0.00	0.00	0.00
						LN3FUG	1,548	100.00%	1,548	0.18	0.00	0.00	0.00	0.77	0.00	0.00	0.00
									Totals:	**2.44**	**0.00**	**1.93**	**0.00**	**10.68**	**0.00**	**8.44**	**0.00**

Footnotes:

[1] Data Provided by Rexam

[2] As calculated in the "Calculation of Maximum Material Usage" table.

[3] Potential Annual Usage by ID (lb/yr) = Potential Annual Usage by Line (lb/yr) * Process ID Fraction of Usage (%)

[4] Potential Hourly Emissions (lb/hr) = Potential Annual Emissions (tpy) / 8760 (hr/yr) * 2000 (lb/ton)

[5] Potential Annual Emissions (tpy) = Potential Annual Usage by ID (lb/yr) * Pollutant Specific Material Composition (%) / 2000 (lb/ton)

Table A-10
Natural Gas Combustion Emission Estimates

REXAM Bevarage Can Company

Phoenix, Arizona

Permit V95005 - Significant Revision

Process	Heat Rating[1]	Emission Factor[2] (lb/MMscf)								Hourly Emissions[3] (lb/hr)								Annual Emissions[4] (ton/yr)							
ID	(MMBtu/hr)	NO_x	CO	SO_2	PM	VOC	HXN	BZN	FML	NO_x	CO	SO_2	PM	VOC	HXN	BZN	FML	NO_x	CO	SO_2	PM	VOC	HXN	BZN	FML
WSHBOIL	3.5	100	84	0.6	7.6	5.5	1.8	0.002	0.075	0.33	0.28	0.00	0.03	0.02	0.01	0.00	0.00	1.46	1.23	0.01	0.11	0.08	0.03	0.00	0.00
WSHHTR1	3.6	100	84	0.6	7.6	5.5	1.8	0.002	0.075	0.34	0.29	0.00	0.03	0.02	0.01	0.00	0.00	1.50	1.26	0.01	0.11	0.08	0.03	0.00	0.00
WSHHTR2	3.2	100	84	0.6	7.6	5.5	1.8	0.002	0.075	0.30	0.26	0.00	0.02	0.02	0.01	0.00	0.00	1.33	1.12	0.01	0.10	0.07	0.02	0.00	0.00
PIN1	4.0	100	84	0.6	7.6	5.5	1.8	0.002	0.075	0.38	0.32	0.00	0.03	0.02	0.01	0.00	0.00	1.67	1.40	0.01	0.13	0.09	0.03	0.00	0.00
PIN2	2.5	100	84	0.6	7.6	5.5	1.8	0.002	0.075	0.24	0.20	0.00	0.02	0.01	0.00	0.00	0.00	1.04	0.88	0.01	0.08	0.06	0.02	0.00	0.00
PIN3	2.5	100	84	0.6	7.6	5.5	1.8	0.002	0.075	0.24	0.20	0.00	0.02	0.01	0.00	0.00	0.00	1.04	0.88	0.01	0.08	0.06	0.02	0.00	0.00
IBO1	3.0	100	84	0.6	7.6	5.5	1.8	0.002	0.075	0.29	0.24	0.00	0.02	0.02	0.01	0.00	0.00	1.25	1.05	0.01	0.10	0.07	0.02	0.00	0.00
IBO2	5.2	100	84	0.6	7.6	5.5	1.8	0.002	0.075	0.50	0.42	0.00	0.04	0.03	0.01	0.00	0.00	2.17	1.82	0.01	0.16	0.12	0.04	0.00	0.00
IBO3	5.2	100	84	0.6	7.6	5.5	1.8	0.002	0.075	0.50	0.42	0.00	0.04	0.03	0.01	0.00	0.00	2.17	1.82	0.01	0.16	0.12	0.04	0.00	0.00
OXDZR	9.0	100	84	0.6	7.6	5.5	1.8	0.002	0.075	0.86	0.72	0.01	0.07	0.05	0.02	0.00	0.00	3.75	3.15	0.02	0.29	0.21	0.07	0.00	0.00
Total										**3.97**	**3.34**	**0.02**	**0.30**	**0.22**	**0.07**	**0.00**	**0.00**	**17.39**	**14.61**	**0.10**	**1.32**	**0.96**	**0.31**	**0.00**	**0.01**

Footnotes:

[1] Data Provided by Rexam

[2] Emission Factors are From AP-42 Tables 1.4-1, 1.4-2 and 1.4-3

[3] Hourly Emissions (lb/hr) = Heat Rating (MMBtu/hr) / Natural Gas Heating Value (Btu/scf) * Emission Factor (lb/MMscf)
Natural Gas Heating Value: 1,050 Btu/scf natural gas

[4] Annual Emissions (ton/yr) = Hourly Emissions (lb/hr) * Maximum Operating Hours (hr/yr) / 2000 lb/ton
Maximum Operating Hours: 8,760 hr/yr

Attachment B: Detailed Post-change Emission Calculations

Table B-1
Facility Equipment Capacity

REXAM Bevarage Can Company

Phoenix, Arizona

Permit V95005 - Significant Revision

Description (Process ID)	Value	Units	Comment
Cupper Capacity (CUP)	Unknown	N/A	Assumed to be limited by Printer Capacity on Annual Basis
Bodymaker Capacity (BDY)	Unknown	N/A	Assumed to be limited by Printer Capacity on Annual Basis
Trimmer Capacity (TRM)	Unknown	N/A	Assumed to be limited by Printer Capacity on Annual Basis
Washer Capacity (WSH)	Unknown	N/A	Assumed to be limited by Printer Capacity on Annual Basis
Washer Boiler Heat Rating (WSHBOIL)	3.50	MMBtu/hr	As listed in Title V Technical Support Document
Washed Object Dryer 1 Heat Rating (WSHHTR1)	3.60	MMBtu/hr	As listed in Title V Technical Support Document
Washed Object Dryer 2 Heat Rating (WSHHTR2)	3.20	MMBtu/hr	As listed in Title V Technical Support Document
Bright Palletizer Capacity (BRTPLT)	Unknown	N/A	Assumed to be limited by Printer Capacity on Annual Basis
Printer Line 1 Capacity (PRT1)	1100	cans/min	As listed in Rexam Emission Calculations
Printer Line 2 Capacity (PRT2)	1380	cans/min	As listed in Rexam Emission Calculations
Printer Line 3 Capacity (PRT3)	1400	cans/min	As listed in Rexam Emission Calculations
Pin Oven 1 Heat Rating (PIN1)	4.00	MMBtu/hr	As listed in Title V Technical Support Document
Pin Oven 2 Heat Rating (PIN2)	2.50	MMBtu/hr	As listed in Title V Technical Support Document
Pin Oven 3 Heat Rating (PIN3)	2.50	MMBtu/hr	As listed in Title V Technical Support Document
Inside Spray Machine Line 1 Capacity (ISM1)	1100	cans/min	As listed in Rexam Emission Calculations
Inside Spray Machine Line 2 Capacity (ISM2)	1380	cans/min	As listed in Rexam Emission Calculations
Inside Spray Machine Line 3 Capacity (ISM3)	1400	cans/min	As listed in Rexam Emission Calculations
Inside Bake Oven 1 Heat Rating (IBO1)	3.00	MMBtu/hr	As listed in Title V Technical Support Document
Inside Bake Oven 2 Heat Rating (IBO2)	5.20	MMBtu/hr	As listed in Title V Technical Support Document
Inside Bake Oven 3 Heat Rating (IBO3)	5.20	MMBtu/hr	As listed in Title V Technical Support Document
Oxidizer Heat Rating (OXDZR)	4.50	MMBtu/hr	As listed in Title V Technical Support Document
Oxidizer Control Efficiency (OXDZR)	81.00%	%	Based on Emission Calculations
Waxing Station Capacity (WAX)	Unknown	N/A	Assumed to be limited by Printer Capacity on Annual Basis
Necking Capacity (NCK)	Unknown	N/A	Assumed to be limited by Printer Capacity on Annual Basis
Product Palletizer Capacity (PRDPLT)	Unknown	N/A	Assumed to be limited by Printer Capacity on Annual Basis

Table B-2
Facility Emissions Summary

REXAM Bevarage Can Company

Phoenix, Arizona

Permit V95005 - Significant Revision

Process ID	Stack ID	Control Device	Hourly Emissions (lb/hr)						Annual Emissions (ton/yr)					
			NO_x	CO	SO_2	PM	VOC	HAP	NO_x	CO	SO_2	PM	VOC	HAP
CUP	None	None	Trivial Fugitive Emissions of VOC from Lubricant											
BDY	OBP-1	OBP-1				0.06	0.004					0.27	0.017	
	OBP-2	OBP-2				0.06	0.004					0.27	0.017	
TRM	None	None												
WSH	WSH	None						No Data						0.013
WSHBOIL	WSHBOIL	None	0.33	0.28	0.00	0.03	0.02	0.01	1.46	1.23	0.01	0.11	0.08	0.03
WSHHTR1	S008	None	0.34	0.29	0.00	0.03	0.02	0.01	1.50	1.26	0.01	0.11	0.08	0.03
WSHHTR2	S009	None	0.30	0.26	0.00	0.02	0.02	0.01	1.33	1.12	0.01	0.10	0.07	0.03
PRT1	S014	None					0.44	0.30					1.94	1.31
PRT2	S014	None					0.53	0.36					2.31	1.56
PRT3	S014	None					0.54	0.37					2.38	1.61
PIN1	S001	None	0.38	0.32	0.00	0.03	5.22	3.26	1.67	1.40	0.01	0.13	22.88	14.28
PIN2	S003	None	0.24	0.20	0.00	0.02	6.24	3.89	1.04	0.88	0.01	0.08	27.32	17.05
PIN3	S005	None	0.24	0.20	0.00	0.02	6.41	4.00	1.04	0.88	0.01	0.08	28.06	17.52
ISM1	S011	OXDZR				0.12	1.31	0.60				0.51	5.74	2.65
ISM2	S012	OXDZR				0.14	0.39	0.18				0.61	1.70	0.78
ISM3	S013	OXDZR				0.14	0.40	0.18				0.62	1.74	0.80
IBO1	S002	None	0.29	0.24	0.00	0.02	11.81	5.44	1.25	1.05	0.01	0.10	51.74	23.84
IBO2	S006/S007	OXDZR	0.50	0.42	0.00	0.04	2.62	1.21	2.17	1.82	0.01	0.16	11.49	5.28
IBO3	S006/S007	OXDZR	0.50	0.42	0.00	0.04	2.68	1.23	2.17	1.82	0.01	0.16	11.73	5.40
OXDZR	S004	N/A	0.43	0.36	0.00	0.03	0.02	0.01	1.88	1.58	0.01	0.14	0.10	0.04
LN1FUG	FUG	None					0.78	0.61					3.40	2.68
LN2FUG	FUG	None					0.81	0.64					3.56	2.81
LN3FUG	FUG	None					0.85	0.67					3.73	2.94
WAX	None	None												
NCK	None	None												
Total Facility Emissions			**3.54**	**2.98**	**0.02**	**0.79**	**41.12**	**22.98**	**15.52**	**13.03**	**0.09**	**3.46**	**180.10**	**100.64**

Table B-3
Calculation of Maximum Material Usage

REXAM Bevarage Can Company

Phoenix, Arizona

Permit V95005 - Significant Revision

Production Area	2001 Can Production[1] *(cans/yr)*	Fraction of 2001 Production[2] *(%)*	Maximum Production[1] *(cans/min)*	Maximum Production[3] *(cans/yr)*	Fraction of Maximum[4] *(%)*
Line 1	3.82E+08	29.28%	1,100	5.78E+08	28.35%
Line 2	4.57E+08	35.04%	1,380	7.25E+08	35.57%
Line 3	4.65E+08	35.68%	1,400	7.36E+08	36.08%
Total	1.30E+09	100.00%	3,880	2.04E+09	100.00%

Footnotes:

[1] Data Provided by Rexam

[2] Fraction of 2001 Production = Individual Line 2001 Can Production / Total 2001 Can Production

[3] Maximum Production (cans/hr) = Maximum Production (cans/min) * 60 min/hr * 8760 (hr/yr)

[4] Fraction of Maximum = Individual Line Maximum Production / Total Maximum Production

Material	Associated Process IDs	Name	2001 Total Usage[1] (gal)	2001 Usage by Line[1] (gal)			Density[1] (lb/gal)	2001 Total Usage[5] (lb)	2001 Usage by Line[5] (lb)			Potential Usage[6] (lb)	Potential Usage by Line[6] (lb)		
				Line 1	Line 2	Line 3			Line 1	Line 2	Line 3		Line 1	Line 2	Line 3
I/S SPRAY	ISM, IBO 1-3	M4020W16M	63,172	18360.00	21121.00	23691.00	8.56	540,752	157,162	180,796	202,795	845,534	245,742	282,697	317,095
I/S SPRAY	ISM, IBO 1-3	M4020W20M	162,733	47,661	57,959	57,113	8.54	1,389,740	407,025	494,970	487,745	2,173,033	636,435	773,948	762,651
VARNISH	PRT, PIN 1-3	CC3625XLV	76,137	22,256	26,567	27,315	8.75	666,199	194,740	232,461	239,006	1,041,686	304,501	363,482	373,716
VARNISH	PRT, PIN 1-3	CC3655	2,065	608	729	747	9	18,585	5,472	6,561	6,723	29,060	8,556	10,259	10,512
INKS	PRT, PIN 1-3	INX	No Data	No Data	No Data	No Data	No Data	119,079	34,834	41,610	42,634	186,195	54,467	65,062	66,664
CLEANER[7]	???	Mirachem 500	110	35	37	38	8.34	917	292	306	320	1,434	456	478	500
CLEANER[7]	???	Glycol Ether	No Data	No Data	No Data	No Data	No Data	10,790	3,432	3,597	3,761	16,872	5,366	5,624	5,881
CLEANER[7]	???	Isopropyl Alcohol	No Data	No Data	No Data	No Data	No Data	2,840	903	947	990	4,441	1,412	1,480	1,548

Footnotes:

[1] Data Provided by Rexam

[5] 2001 Usage (lb) = 2001 Total Usage (gal) * Density (lb/gal) ; Except where No Data is provided, the values are provided by Rexam

[6] Potential Usage (lb) = [2001 Usage (lb)] * [Maximum Production (cans/yr)] / [2001 Can Production (cans/yr)]

[7] The "Usage by Line" values have been updated based on data provided in the response dated July 8, 2004 from Rexam.

Table B-4

Particulate Matter Emissions due to Inside Spray Operations

REXAM Bevarage Can Company

Phoenix, Arizona

Permit V95005 - Significant Revision

Material	Name	Solids Content[1] *(%)*	Process ID	Potential Annual Usage[2] *(lb/yr)*	Overspray Percent[3] *(%)*	Control Efficiency[3] *(%)*	Potential Hourly Emissions[4] *(lb/hr)*	Potential Annual Emissions[5] *(tpy)*
I/S SPRAY	M4020W16M	24.60%	ISM1	245,742	6%	92%	0.03	0.15
			ISM2	282,697	6%	92%	0.04	0.17
			ISM3	317,095	6%	92%	0.04	0.19
I/S SPRAY	M4020W20M	23.90%	ISM1	636,435	6%	92%	0.08	0.37
			ISM2	773,948	6%	92%	0.10	0.44
			ISM3	762,651	6%	92%	0.10	0.44
						Totals:	**0.40**	**1.75**

Footnotes:

[1] Data Provided by Rexam

[2] As calculated in the "Calculation of Maximum Material Usage" table.

[3] As assumed by Rexam

[4] Potential Hourly Emissions = Potential Annual Emissions (tpy) * 2000 (lb/ton) / 8760 (hr/yr)

[5] Potential Annual Emissions =
Potential Annual Usage (lb/yr) * Solids Content (%) * Overspray Percent (%) * [1 - Control Efficiency (%)] / 2000 (lb/ton)

Table B-5

Particulate Matter and VOC Emissions Associated with Oil Mist Collection System

REXAM Bevarage Can Company

Phoenix, Arizona

Permit V95005 - Significant Revision

Process ID	Stack ID	Annual Operating Hours *(hr)*	Potential Hourly PM Emissions[1] *(lb/hr)*	Potential Annual PM Emissions[2] *(tpy)*	VOC Content[1] *(%)*	Potential Hourly VOC Emissions[3] *(lb/hr)*	Potential Annual VOC Emissions[4] *(tpy)*
BDY	OBP-1	8760	0.061	0.27	6.50%	0.004	0.017
	OBP-2	8760	0.061	0.27	6.50%	0.004	0.017
Total			**0.12**	**0.53**		**0.008**	**0.035**

Footnotes:

[1] Data Provided by Rexam

[2] Potential Annual PM Emissions (tpy) = Potential Hourly PM Emissions (lb/hr) * Annual Operating Hours (hr) / 2000 (lb/ton)

[3] Potential Hourly VOC Emissions (lb/hr) = Potential Hourly PM Emissions (lb/hr) * VOC Content (%)

[4] Potential Annual VOC Emissions (lb/hr) = Potential Annual PM Emissions (lb/hr) * VOC Content (%)

Table B-6

Hydrofluoric Acid Emissions Due to Washing

REXAM Bevarage Can Company

Phoenix, Arizona

Permit V95005 - Significant Revision

Process ID	Wash Solution Usage *(lb/yr)*	HF Concentration *(%)*	HF Usage[1] *(lb/yr)*	HF Emission Factor[1] *(lb/lb used)*	Annual Emissions[2] *(lb/yr)*	Annual Emissions[3] *(ton/yr)*
WSH	123463.9	21.00%	25927	0.001	25.9	0.013

Footnotes:

[1] Data Provided by Rexam

[2] Annual Emissions (lb/yr) = HF Usage (lb/yr) * HF Emission Factor (lb/lb used)

[3] Annual Emissions (ton/yr) = Annual Emissions (lb/yr) / 2000 (lb/yr)

Table B-7

VOC Emissions due to Printing
REXAM Bevarage Can Company
Phoenix, Arizona
Permit V95005 - Significant Revision

Material	Name	Material Composition[1]				Process ID	Potential Annual Usage by Line[2]	Process ID Fraction of Usage[1]	Potential Annual Usage by ID[3]	Potential Hourly Emissions[4]				Potential Annual Emissions[5]			
		VOC (%)	Formald-eyhde (%)	Glycol Ether (%)	Chromium Compounds (%)		(lb/yr)	(%)	(lb/yr)	VOC (lb/hr)	Formald-eyhde (lb/hr)	Glycol Ether (lb/hr)	Chromium Compounds (lb/hr)	VOC (tpy)	Formald-eyhde (tpy)	Glycol Ether (tpy)	Chromium Compounds (tpy)
VARNISH	CC3625XLV	11.20%	0.00%	7.20%	0.00%	PRT1	304,501	10.00%	30,450	0.39	0.00	0.25	0.00	1.71	0.00	1.10	0.00
						PIN1		90.00%	274,050	3.50	0.00	2.25	0.00	15.35	0.00	9.87	0.00
						PRT2	363,482	10.00%	36,348	0.46	0.00	0.30	0.00	2.04	0.00	1.31	0.00
						PIN2		90.00%	327,134	4.18	0.00	2.69	0.00	18.32	0.00	11.78	0.00
						PRT3	373,716	10.00%	37,372	0.48	0.00	0.31	0.00	2.09	0.00	1.35	0.00
						PIN3		90.00%	336,345	4.30	0.00	2.76	0.00	18.84	0.00	12.11	0.00
VARNISH	CC3655	14.90%	0.00%	10.70%	0.00%	PRT1	8,556	10.00%	856	0.01	0.00	0.01	0.00	0.06	0.00	0.05	0.00
						PIN1		90.00%	7,701	0.13	0.00	0.09	0.00	0.57	0.00	0.41	0.00
						PRT2	10,259	10.00%	1,026	0.02	0.00	0.01	0.00	0.08	0.00	0.05	0.00
						PIN2		90.00%	9,233	0.16	0.00	0.11	0.00	0.69	0.00	0.49	0.00
						PRT3	10,512	10.00%	1,051	0.02	0.00	0.01	0.00	0.08	0.00	0.06	0.00
						PIN3		90.00%	9,461	0.16	0.00	0.12	0.00	0.70	0.00	0.51	0.00
INKS	INX	20.00%	0.01%	9.11%	0.02%	PRT1	54,467	0.00%	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
						PIN1		100.00%	54,467	1.24	0.00	0.57	0.00	5.45	0.00	2.48	0.01
						PRT2	65,062	0.00%	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
						PIN2		100.00%	65,062	1.49	0.00	0.68	0.00	6.51	0.00	2.96	0.01
						PRT3	66,664	0.00%	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
						PIN3		100.00%	66,664	1.52	0.00	0.69	0.00	6.67	0.00	3.04	0.01
									Totals:	**18.07**	**0.00**	**10.86**	**0.00**	**79.14**	**0.01**	**47.55**	**0.02**

Footnotes:

[1] Data Provided by Rexam

[2] As calculated in the "Calculation of Maximum Material Usage" table.

[3] Potential Annual Usage by ID (lb/yr) = Potential Annual Usage by Line (lb/yr) * Process ID Fraction of Usage (%)

[4] Potential Hourly Emissions (lb/hr) = Potential Annual Emissions (tpy) / 8760 (hr/yr) * 2000 (lb/ton)

[5] Potential Annual Emissions (tpy) = Potential Annual Usage by ID (lb/yr) * Pollutant Specific Material Composition (%) / 2000 (lb/ton)

Table B-7a

Formed Formaldehyde (HCHO) Emissions due to Printing
REXAM Bevarage Can Company
Phoenix, Arizona
Permit V95005 - Significant Revision

Material	Name	Emission Factor[1] *(lb HCHO / lb Solids)*	Solids Content[2] *(lb Solids / lb Material)*	Emission Factor[3] *(lb HCHO / lb Material)*	Process ID	Potential Annual Usage by Line[4] *(lb/yr)*	Process ID Fraction of Usage[2] (%)	Potential Annual Usage by ID[5] *(lb/yr)*	Potential Hourly Formaldehyde Emissions[6] *(lb/hr)*	Potential Annual Formaldehyde Emissions[7] *(tpy)*
VARNISH	CC3625XLV	0.028	0.38	0.011	PRT1	304,501	10.00%	30,450	0.04	0.16
					PIN1		90.00%	274,050	0.33	1.46
					PRT2	363,482	10.00%	36,348	0.04	0.19
					PIN2		90.00%	327,134	0.40	1.74
					PRT3	373,716	10.00%	37,372	0.05	0.20
					PIN3		90.00%	336,345	0.41	1.79
VARNISH	CC3655	0.028	0.52	0.014	PRT1	8,556	10.00%	856	0.00	0.01
					PIN1		90.00%	7,701	0.01	0.06
					PRT2	10,259	10.00%	1,026	0.00	0.01
					PIN2		90.00%	9,233	0.02	0.07
					PRT3	10,512	10.00%	1,051	0.00	0.01
					PIN3		90.00%	9,461	0.02	0.07
								Totals:	**1.31**	**5.75**

Footnotes:

[1] Emission Factor Provided by Rexam based on Internal Engineering Estimate from Source Testing at Similar Facilities

[2] Data Provided by Rexam

[3] Emission Factor (lb HCHO / lb material) = Emission Factor (lb HCHO / lb solid) * Solids Content (lb solids / lb material)

[4] As calculated in the "Calculation of Maximum Material Usage" table.

[5] Potential Annual Usage by ID (lb/yr) = Potential Annual Usage by Line (lb/yr) * Process ID Fraction of Usage (%)

[6] Potential Hourly Emissions (lb/hr) = Potential Annual Emissions (tpy) / 8760 (hr/yr) * 2000 (lb/ton)

[7] Potential Annual Emissions (tpy) = Potential Annual Usage by ID (lb/yr) * Pollutant Specific Material Composition (%) / 2000 (lb/ton)

Table B-8

VOC Emissions due to Inside Spray Operations
REXAM Bevarage Can Company
Phoenix, Arizona
Permit V95005 - Significant Revision

Material	Name	Material Composition[1]				Process ID	Potential Annual Usage by Line[2] (lb/yr)	Process ID Fraction of Usage[1] (%)	Potential Annual Usage by ID[3] (lb/yr)	Control Efficiency[1] (%)	Potential Hourly Emissions[4]				Potential Annual Emi		
		VOC (%)	Formald-eyhde (%)	Glycol Ether (%)	Chromium Compounds (%)						VOC (lb/hr)	Formald-eyhde (lb/hr)	Glycol Ether (lb/hr)	Chromium Compounds (lb/hr)	VOC (tpy)	Formald-eyhde (tpy)	Glycol Ether (tpy)
I/S SPRAY	M4020W16M	12.80%	0.00%	6.00%	0.00%	ISM1	245,742	10.00%	24,574	0%	0.36	0.00	0.17	0.00	1.57	0.00	0.74
						IBO1		90.00%	221,168	0%	3.23	0.00	1.51	0.00	14.15	0.00	6.64
						ISM2	282,697	13.00%	36,751	81%	0.10	0.00	0.05	0.00	0.45	0.00	0.21
						IBO2		87.00%	245,946	81%	0.68	0.00	0.32	0.00	2.99	0.00	1.40
						ISM3	317,095	13.00%	41,222	81%	0.11	0.00	0.05	0.00	0.50	0.00	0.23
						IBO3		87.00%	275,873	81%	0.77	0.00	0.36	0.00	3.35	0.00	1.57
I/S SPRAY	M4020W20M	13.10%	0.00%	6.00%	0.00%	ISM1	636,435	10.00%	63,643	0%	0.95	0.00	0.44	0.00	4.17	0.00	1.91
						IBO1		90.00%	572,791	0%	8.57	0.00	3.92	0.00	37.52	0.00	17.18
						ISM2	773,948	13.00%	100,613	81%	0.29	0.00	0.13	0.00	1.25	0.00	0.57
						IBO2		87.00%	673,335	81%	1.91	0.00	0.88	0.00	8.38	0.00	3.84
						ISM3	762,651	13.00%	99,145	81%	0.28	0.00	0.13	0.00	1.23	0.00	0.57
						IBO3		87.00%	663,506	81%	1.89	0.00	0.86	0.00	8.26	0.00	3.78
										Totals:	**19.14**	**0.00**	**8.82**	**0.00**	**83.83**	**0.00**	**38.64**

Footnotes:

[1] Data Provided by Rexam as amended in the response date July 8, 2004.
[2] As calculated in the "Calculation of Maximum Material Usage" table.
[3] Potential Annual Usage by ID (lb/yr) = Potential Annual Usage by Line (lb/yr) * Process ID Fraction of Usage (%)
[4] Potential Hourly Emissions (lb/hr) = Potential Annual Emissions (tpy) / 8760 (hr/yr) * 2000 (lb/ton)
[5] Potential Annual Emissions (tpy) = Potential Annual Usage by ID (lb/yr) * Pollutant Specific Material Composition (%) / 2000 (lb/ton)

Table B-9

VOC Emissions due to Cleaner Usage
REXAM Bevarage Can Company
Phoenix, Arizona
Permit V95005 - Significant Revision

Material	Name	Material Composition[1]				Process ID	Potential Annual Usage by Line[2]	FIN Fraction of Usage[1]	Potential Annual Usage by ID[3]	Potential Hourly Emissions[4]				Potential Annual Emissions[5]			
		VOC (%)	Formald-eyhde (%)	Glycol Ether (%)	Chromium Compounds (%)		(lb/yr)	(%)	(lb/yr)	VOC (lb/hr)	Formald-eyhde (lb/hr)	Glycol Ether (lb/hr)	Chromium Compounds (lb/hr)	VOC (tpy)	Formald-eyhde (tpy)	Glycol Ether (tpy)	Chromium Compounds (tpy)
CLEANER	Mirachem 500	5.10%	0.00%	0.00%	0.00%	LN1FUG	456	100.00%	456	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
						LN2FUG	478	100.00%	478	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
						LN3FUG	500	100.00%	500	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
CLEANER	Glycol Ether	100.0%	0.00%	100.0%	0.00%	LN1FUG	5,366	100.00%	5,366	0.61	0.00	0.61	0.00	2.68	0.00	2.68	0.00
						LN2FUG	5,624	100.00%	5,624	0.64	0.00	0.64	0.00	2.81	0.00	2.81	0.00
						LN3FUG	5,881	100.00%	5,881	0.67	0.00	0.67	0.00	2.94	0.00	2.94	0.00
CLEANER	Isopropyl Alcohol	100.0%	0.00%	0.00%	0.00%	LN1FUG	1,412	100.00%	1,412	0.16	0.00	0.00	0.00	0.71	0.00	0.00	0.00
						LN2FUG	1,480	100.00%	1,480	0.17	0.00	0.00	0.00	0.74	0.00	0.00	0.00
						LN3FUG	1,548	100.00%	1,548	0.18	0.00	0.00	0.00	0.77	0.00	0.00	0.00
									Totals:	**2.44**	**0.00**	**1.93**	**0.00**	**10.68**	**0.00**	**8.44**	**0.00**

Footnotes:

[1] Data Provided by Rexam

[2] As calculated in the "Calculation of Maximum Material Usage" table.

[3] Potential Annual Usage by ID (lb/yr) = Potential Annual Usage by Line (lb/yr) * Process ID Fraction of Usage (%)

[4] Potential Hourly Emissions (lb/hr) = Potential Annual Emissions (tpy) / 8760 (hr/yr) * 2000 (lb/ton)

[5] Potential Annual Emissions (tpy) = Potential Annual Usage by ID (lb/yr) * Pollutant Specific Material Composition (%) / 2000 (lb/ton)

Table B-10
Natural Gas Combustion Emission Estimates

REXAM Bevarage Can Company

Phoenix, Arizona

Permit V95005 - Significant Revision

Process	Heat Rating[1]	Emission Factor[2] (lb/MMscf)								Hourly Emissions[3] (lb/hr)								Annual Emissions[4] (ton/yr)							
ID	(MMBtu/hr)	NO_x	CO	SO_2	PM	VOC	HXN	BZN	FML	NO_x	CO	SO_2	PM	VOC	HXN	BZN	FML	NO_x	CO	SO_2	PM	VOC	HXN	BZN	FML
WSHBOIL	3.5	100	84	0.6	7.6	5.5	1.8	0.002	0.075	0.33	0.28	0.00	0.03	0.02	0.01	0.00	0.00	1.46	1.23	0.01	0.11	0.08	0.03	0.00	0.00
WSHHTR1	3.6	100	84	0.6	7.6	5.5	1.8	0.002	0.075	0.34	0.29	0.00	0.03	0.02	0.01	0.00	0.00	1.50	1.26	0.01	0.11	0.08	0.03	0.00	0.00
WSHHTR2	3.2	100	84	0.6	7.6	5.5	1.8	0.002	0.075	0.30	0.26	0.00	0.02	0.02	0.01	0.00	0.00	1.33	1.12	0.01	0.10	0.07	0.02	0.00	0.00
PIN1	4.0	100	84	0.6	7.6	5.5	1.8	0.002	0.075	0.38	0.32	0.00	0.03	0.02	0.01	0.00	0.00	1.67	1.40	0.01	0.13	0.09	0.03	0.00	0.00
PIN2	2.5	100	84	0.6	7.6	5.5	1.8	0.002	0.075	0.24	0.20	0.00	0.02	0.01	0.00	0.00	0.00	1.04	0.88	0.01	0.08	0.06	0.02	0.00	0.00
PIN3	2.5	100	84	0.6	7.6	5.5	1.8	0.002	0.075	0.24	0.20	0.00	0.02	0.01	0.00	0.00	0.00	1.04	0.88	0.01	0.08	0.06	0.02	0.00	0.00
IBO1	3.0	100	84	0.6	7.6	5.5	1.8	0.002	0.075	0.29	0.24	0.00	0.02	0.02	0.01	0.00	0.00	1.25	1.05	0.01	0.10	0.07	0.02	0.00	0.00
IBO2	5.2	100	84	0.6	7.6	5.5	1.8	0.002	0.075	0.50	0.42	0.00	0.04	0.03	0.01	0.00	0.00	2.17	1.82	0.01	0.16	0.12	0.04	0.00	0.00
IBO3	5.2	100	84	0.6	7.6	5.5	1.8	0.002	0.075	0.50	0.42	0.00	0.04	0.03	0.01	0.00	0.00	2.17	1.82	0.01	0.16	0.12	0.04	0.00	0.00
OXDZR	4.5	100	84	0.6	7.6	5.5	1.8	0.002	0.075	0.43	0.36	0.00	0.03	0.02	0.01	0.00	0.00	1.88	1.58	0.01	0.14	0.10	0.03	0.00	0.00
Total										**3.54**	**2.98**	**0.02**	**0.27**	**0.19**	**0.06**	**0.00**	**0.00**	**15.52**	**13.03**	**0.09**	**1.18**	**0.85**	**0.28**	**0.00**	**0.01**

Footnotes:

[1] Data Provided by Rexam

[2] Emission Factors are From AP-42 Tables 1.4-1, 1.4-2 and 1.4-3

[3] Hourly Emissions (lb/hr) = Heat Rating (MMBtu/hr) / Natural Gas Heating Value (Btu/scf) * Emission Factor (lb/MMscf)
Natural Gas Heating Value: 1,050 Btu/scf natural gas

[4] Annual Emissions (ton/yr) = Hourly Emissions (lb/hr) * Maximum Operating Hours (hr/yr) / 2000 lb/ton
Maximum Operating Hours: 8,760 hr/yr

Attachment C: Calculated 2002 Actual VOC Annual Emissions

Table C-1
Facility Emissions Summary

REXAM Bevarage Can Company

Phoenix, Arizona

Permit V95005 - Significant Revision

Process ID	Stack ID	Control Device	Estimated Annual VOC Emissions	
			(lb/yr)	(tpy)
CUP	None	None		
BDY	OBP-1	OBP-1	35	0.017
	OBP-2	OBP-2	35	0.017
TRM	None	None		
WSH	WSH	None		
WSHBOIL	WSHBOIL	None	161	0.08
WSHHTR1	S008	None	165	0.08
WSHHTR2	S009	None	147	0.07
PRT1	S014	None	2728	1.36
PRT2	S014	None	3028	1.51
PRT3	S014	None	3211	1.61
PIN1	S001	None	30940	15.47
PIN2	S003	None	34357	17.18
PIN3	S005	None	36433	18.22
ISM1	S011/FUG	None	10197	5.10
ISM2	S012/FUG	None	11104	5.55
ISM3	S013/FUG	None	11776	5.89
IBO1	S002	None	68377	34.19
IBO2	S006/S007	CATOX	5363	2.68
IBO3	S006/S007	CATOX	5674	2.84
OXDZR	S004	N/A	413	0.21
LN1FUG	FUG	None	9268	4.63
LN2FUG	FUG	None	0	0.00
LN3FUG	FUG	None	0	0.00
WAX	None	None		
NCK	None	None		
Total Facility Emissions			**233411**	**116.71**

Table C-2
Calculation of Maximum Material Usage

REXAM Bevarage Can Company

Phoenix, Arizona

Permit V95005 - Significant Revision

Production Area	2001 Can Production[1] *(cans/yr)*	Fraction of 2001 Production[2] *(%)*	Maximum Production[1] *(cans/min)*	Maximum Production[3] *(cans/yr)*	Fraction of Maximum[4] *(%)*
Line 1	3.82E+08	29.28%	1,100	5.78E+08	28.35%
Line 2	4.57E+08	35.04%	1,380	7.25E+08	35.57%
Line 3	4.65E+08	35.68%	1,400	7.36E+08	36.08%
Total	1.30E+09	100.00%	3,880	2.04E+09	100.00%

Footnotes:

[1] Data Provided by Rexam

[2] Fraction of 2001 Production = Individual Line 2001 Can Production / Total 2001 Can Production

[3] Maximum Production (cans/hr) = Maximum Production (cans/min) * 60 min/hr * 8760 (hr/yr)

[4] Fraction of Maximum = Individual Line Maximum Production / Total Maximum Production

Material	Associated Process IDs	Name	2003 Total Usage[1] (gal)	2003 Usage by Line[1] (gal)			Density[1] (lb/gal)	2003 Total Usage[5] (lb)	2003 Usage by Line[5] (lb)			2003 Total Usage[6] (lb)	Potential Usage by Line[6] (lb)		
				Line 1	Line 2	Line 3			Line 1	Line 2	Line 3		Line 1	Line 2	Line 3
I/S SPRAY	ISM, IBO 1-3	M4020W16M			77953.00	82673.00	8.56	1,374,959	0	667,278	707,681	1,374,959	0	667,278	707,681
I/S SPRAY	ISM, IBO 1-3	M4020W20M		70,111			8.54	598,748	598,748	0	0	598,748	598,748	0	0
VARNISH	PRT, PIN 1-3	CC3625XLV		24,501	27,208	28,845	8.75	704,848	214,384	238,070	252,394	704,848	214,384	238,070	252,394
VARNISH	PRT, PIN 1-3	CC3655		671	738	788	9	19,773	6,039	6,642	7,092	19,773	6,039	6,642	7,092
INKS	PRT, PIN 1-3	INX					No Data		35,496	39,461	41,842	0	35,496	39,461	41,842
CLEANER[7]	???	Mirachem 500		55			8.34	0	459	0	0	0	459	0	0
CLEANER[7]	???	Glycol Ether					No Data		7,470			0	7,470	0	0
CLEANER[7]	???	Isopropyl Alcohol					No Data		1,775			0	1,775	0	0

Footnotes:

[1] Data Provided by Rexam

[5] 2001 Usage (lb) = 2001 Total Usage (gal) * Density (lb/gal) ; Except where No Data is provided, the values are provided by Rexam

[6] Potential Usage (lb) = [2001 Usage (lb)] * [Maximum Production (cans/yr)] / [2001 Can Production (cans/yr)]

[7] The "Usage by Line" values have been updated based on data provided in the response dated July 8, 2004 from Rexam.

Table C-3

Particulate Matter and VOC Emissions Associated with Oil Mist Collection System

REXAM Bevarage Can Company

Phoenix, Arizona

Permit V95005 - Significant Revision

Process ID	Stack ID	Annual Operating Hours *(hr)*	Potential Hourly PM Emissions[1] *(lb/hr)*	Potential Annual PM Emissions[2] *(tpy)*	VOC Content[1] *(%)*	Potential Hourly VOC Emissions[3] *(lb/hr)*	Potential Annual VOC Emissions[4] *(tpy)*
BDY	OBP-1	8760	0.061	0.27	6.50%	0.004	0.017
	OBP-2	8760	0.061	0.27	6.50%	0.004	0.017
Total			**0.12**	**0.53**		**0.008**	**0.035**

Footnotes:

[1] Data Provided by Rexam

[2] Potential Annual PM Emissions (tpy) = Potential Hourly PM Emissions (lb/hr) * Annual Operating Hours (hr) / 2000 (lb/ton)

[3] Potential Hourly VOC Emissions (lb/hr) = Potential Hourly PM Emissions (lb/hr) * VOC Content (%)

[4] Potential Annual VOC Emissions (lb/hr) = Potential Annual PM Emissions (lb/hr) * VOC Content (%)

Table C-4

VOC Emissions due to Printing
REXAM Bevarage Can Company
Phoenix, Arizona
Permit V95005 - Significant Revision

Material	Name	Material Composition[1]				Process ID	Potential Annual Usage by Line[2] (lb/yr)	Process ID Fraction of Usage[1] (%)	Potential Annual Usage by ID[3] (lb/yr)	Potential Hourly Emissions[4]				Potential Annual Emissions[5]			
		VOC (%)	Formald-eyhde (%)	Glycol Ether (%)	Chromium Compounds (%)					VOC (lb/hr)	Formald-eyhde (lb/hr)	Glycol Ether (lb/hr)	Chromium Compounds (lb/hr)	VOC (tpy)	Formald-eyhde (tpy)	Glycol Ether (tpy)	Chromium Compounds (tpy)
VARNISH	CC3625XLV	11.20%	0.00%	7.20%	0.00%	PRT1	214,384	10.00%	21,438	0.27	0.00	0.18	0.00	1.20	0.00	0.77	0.00
						PIN1		90.00%	192,945	2.47	0.00	1.59	0.00	10.80	0.00	6.95	0.00
						PRT2	238,070	10.00%	23,807	0.30	0.00	0.20	0.00	1.33	0.00	0.86	0.00
						PIN2		90.00%	214,263	2.74	0.00	1.76	0.00	12.00	0.00	7.71	0.00
						PRT3	252,394	10.00%	25,239	0.32	0.00	0.21	0.00	1.41	0.00	0.91	0.00
						PIN3		90.00%	227,154	2.90	0.00	1.87	0.00	12.72	0.00	8.18	0.00
VARNISH	CC3655	14.90%	0.00%	10.70%	0.00%	PRT1	6,039	10.00%	604	0.01	0.00	0.01	0.00	0.04	0.00	0.03	0.00
						PIN1		90.00%	5,435	0.09	0.00	0.07	0.00	0.40	0.00	0.29	0.00
						PRT2	6,642	10.00%	664	0.01	0.00	0.01	0.00	0.05	0.00	0.04	0.00
						PIN2		90.00%	5,978	0.10	0.00	0.07	0.00	0.45	0.00	0.32	0.00
						PRT3	7,092	10.00%	709	0.01	0.00	0.01	0.00	0.05	0.00	0.04	0.00
						PIN3		90.00%	6,383	0.11	0.00	0.08	0.00	0.48	0.00	0.34	0.00
INKS	INX	18.00%	0.01%	9.11%	0.02%	PRT1	35,496	0.00%	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
						PIN1		100.00%	35,496	0.73	0.00	0.37	0.00	3.19	0.00	1.62	0.00
						PRT2	39,461	0.00%	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
						PIN2		100.00%	39,461	0.81	0.00	0.41	0.00	3.55	0.00	1.80	0.00
						PRT3	41,842	0.00%	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
						PIN3		100.00%	41,842	0.86	0.00	0.44	0.00	3.77	0.00	1.91	0.00
									Totals:	**11.75**	**0.00**	**7.25**	**0.00**	**51.46**	**0.01**	**31.75**	**0.01**

Footnotes:

[1] Data Provided by Rexam

[2] As calculated in the "Calculation of Maximum Material Usage" table.

[3] Potential Annual Usage by ID (lb/yr) = Potential Annual Usage by Line (lb/yr) * Process ID Fraction of Usage (%)

[4] Potential Hourly Emissions (lb/hr) = Potential Annual Emissions (tpy) / 8760 (hr/yr) * 2000 (lb/ton)

[5] Potential Annual Emissions (tpy) = Potential Annual Usage by ID (lb/yr) * Pollutant Specific Material Composition (%) / 2000 (lb/ton)

Table C-4a

Formed Formaldehyde (HCHO) Emissions due to Printing
REXAM Bevarage Can Company
Phoenix, Arizona
Permit V95005 - Significant Revision

Material	Name	Emission Factor[1] *(lb HCHO / lb Solids)*	Solids Content[2] *(lb Solids / lb Material)*	Emission Factor[3] *(lb HCHO / lb Material)*	Process ID	Potential Annual Usage by Line[4] *(lb/yr)*	Process ID Fraction of Usage[2] (%)	Potential Annual Usage by ID[5] *(lb/yr)*	Potential Hourly Formaldehyde Emissions[6] *(lb/hr)*	Potential Annual Formaldehyde Emissions[7] *(tpy)*
VARNISH	CC3625XLV	0.028	0.38	0.011	PRT1	214,384	10.00%	21,438	0.03	0.11
					PIN1		90.00%	192,945	0.23	1.03
					PRT2	238,070	10.00%	23,807	0.03	0.13
					PIN2		90.00%	214,263	0.26	1.14
					PRT3	252,394	10.00%	25,239	0.03	0.13
					PIN3		90.00%	227,154	0.28	1.21
VARNISH	CC3655	0.028	0.52	0.014	PRT1	6,039	10.00%	604	0.00	0.00
					PIN1		90.00%	5,435	0.01	0.04
					PRT2	6,642	10.00%	664	0.00	0.00
					PIN2		90.00%	5,978	0.01	0.04
					PRT3	7,092	10.00%	709	0.00	0.01
					PIN3		90.00%	6,383	0.01	0.05
								Totals:	**0.89**	**3.89**

Footnotes:

[1] Emission Factor Provided by Rexam based on Internal Engineering Estimate from Source Testing at Similar Facilities

[2] Data Provided by Rexam

[3] Emission Factor (lb HCHO / lb material) = Emission Factor (lb HCHO / lb solid) * Solids Content (lb solids / lb material)

[4] As calculated in the "Calculation of Maximum Material Usage" table.

[5] Potential Annual Usage by ID (lb/yr) = Potential Annual Usage by Line (lb/yr) * Process ID Fraction of Usage (%)

[6] Potential Hourly Emissions (lb/hr) = Potential Annual Emissions (tpy) / 8760 (hr/yr) * 2000 (lb/ton)

[7] Potential Annual Emissions (tpy) = Potential Annual Usage by ID (lb/yr) * Pollutant Specific Material Composition (%) / 2000 (lb/ton)

Table C-5

VOC Emissions due to Inside Spray Operations
REXAM Bevarage Can Company
Phoenix, Arizona
Permit V95005 - Significant Revision

Material	Name	Material Composition[1]				Process ID	Potential Annual Usage by Line[2] (lb/yr)	Process ID Fraction of Usage[1] (%)	Potential Annual Usage by ID[3] (lb/yr)	Control Efficiency[1] (%)	Potential Hourly Emissions[4]				Potential Annual Emi		
		VOC (%)	Formald-eyhde (%)	Glycol Ether (%)	Chromium Compounds (%)						VOC (lb/hr)	Formald-eyhde (lb/hr)	Glycol Ether (lb/hr)	Chromium Compounds (lb/hr)	VOC (tpy)	Formald-eyhde (tpy)	Glycol Ether (tpy)
I/S SPRAY	M4020W16M	12.80%	0.00%	6.00%	0.00%	ISM1	0	13.00%	0	0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
						IBO1		87.00%	0	0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
						ISM2	667,278	13.00%	86,746	0%	1.27	0.00	0.59	0.00	5.55	0.00	2.60
						IBO2		87.00%	580,532	93%	0.59	0.00	0.27	0.00	2.56	0.00	1.20
						ISM3	707,681	13.00%	91,999	0%	1.34	0.00	0.63	0.00	5.89	0.00	2.76
						IBO3		87.00%	615,682	93%	0.62	0.00	0.29	0.00	2.72	0.00	1.27
I/S SPRAY	M4020W20M	13.10%	0.00%	6.00%	0.00%	ISM1	598,748	13.00%	77,837	0%	1.16	0.00	0.53	0.00	5.10	0.00	2.34
						IBO1		87.00%	520,911	0%	7.79	0.00	3.57	0.00	34.12	0.00	15.63
						ISM2	0	13.00%	0	0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
						IBO2		87.00%	0	93%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
						ISM3	0	13.00%	0	0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
						IBO3		87.00%	0	93%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
										Totals:	**12.77**	**0.00**	**5.89**	**0.00**	**55.94**	**0.00**	**25.80**

Footnotes:

[1] Data Provided by Rexam

[2] As calculated in the "Calculation of Maximum Material Usage" table.

[3] Potential Annual Usage by ID (lb/yr) = Potential Annual Usage by Line (lb/yr) * Process ID Fraction of Usage (%)

[4] Potential Hourly Emissions (lb/hr) = Potential Annual Emissions (tpy) / 8760 (hr/yr) * 2000 (lb/ton)

[5] Potential Annual Emissions (tpy) = Potential Annual Usage by ID (lb/yr) * Pollutant Specific Material Composition (%) / 2000 (lb/ton)

Table C-6

VOC Emissions due to Cleaner Usage
REXAM Bevarage Can Company
Phoenix, Arizona
Permit V95005 - Significant Revision

Material	Name	Material Composition[1]				Process ID	Potential Annual Usage by Line[2] (lb/yr)	FIN Fraction of Usage[1] (%)	Potential Annual Usage by ID[3] (lb/yr)	Potential Hourly Emissions[4]				Potential Annual Emissions[5]			
		VOC (%)	Formald-eyhde (%)	Glycol Ether (%)	Chromium Compounds (%)					VOC (lb/hr)	Formald-eyhde (lb/hr)	Glycol Ether (lb/hr)	Chromium Compounds (lb/hr)	VOC (tpy)	Formald-eyhde (tpy)	Glycol Ether (tpy)	Chromium Compounds (tpy)
CLEANER	Mirachem 500	5.10%	0.00%	0.00%	0.00%	LN1FUG	459	100.00%	459	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
						LN2FUG	0	100.00%	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
						LN3FUG	0	100.00%	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CLEANER	Glycol Ether	100.0%	0.00%	100.0%	0.00%	LN1FUG	7,470	100.00%	7,470	0.85	0.00	0.85	0.00	3.74	0.00	3.74	0.00
						LN2FUG	0	100.00%	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
						LN3FUG	0	100.00%	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CLEANER	Isopropyl Alcohol	100.0%	0.00%	0.00%	0.00%	LN1FUG	1,775	100.00%	1,775	0.20	0.00	0.00	0.00	0.89	0.00	0.00	0.00
						LN2FUG	0	100.00%	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
						LN3FUG	0	100.00%	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
									Totals:	**1.06**	**0.00**	**0.85**	**0.00**	**4.62**	**0.00**	**3.74**	**0.00**

Footnotes:

[1] Data Provided by Rexam

[2] As calculated in the "Calculation of Maximum Material Usage" table.

[3] Potential Annual Usage by ID (lb/yr) = Potential Annual Usage by Line (lb/yr) * Process ID Fraction of Usage (%)

[4] Potential Hourly Emissions (lb/hr) = Potential Annual Emissions (tpy) / 8760 (hr/yr) * 2000 (lb/ton)

[5] Potential Annual Emissions (tpy) = Potential Annual Usage by ID (lb/yr) * Pollutant Specific Material Composition (%) / 2000 (lb/ton)

Table C-7
Natural Gas Combustion Emission Estimates

REXAM Bevarage Can Company

Phoenix, Arizona

Permit V95005 - Significant Revision

Process ID	Heat Rating[1] (MMBtu/hr)	Emission Factor[2] (lb/MMscf)								Hourly Emissions[3] (lb/hr)								Annual Emissions[4] (ton/yr)							
		NO_x	CO	SO_2	PM	VOC	HXN	BZN	FML	NO_x	CO	SO_2	PM	VOC	HXN	BZN	FML	NO_x	CO	SO_2	PM	VOC	HXN	BZN	FML
WSHBOIL	3.5	100	84	0.6	7.6	5.5	1.8	0.002	0.075	0.33	0.28	0.00	0.03	0.02	0.01	0.00	0.00	1.46	1.23	0.01	0.11	0.08	0.03	0.00	0.00
WSHHTR1	3.6	100	84	0.6	7.6	5.5	1.8	0.002	0.075	0.34	0.29	0.00	0.03	0.02	0.01	0.00	0.00	1.50	1.26	0.01	0.11	0.08	0.03	0.00	0.00
WSHHTR2	3.2	100	84	0.6	7.6	5.5	1.8	0.002	0.075	0.30	0.26	0.00	0.02	0.02	0.01	0.00	0.00	1.33	1.12	0.01	0.10	0.07	0.02	0.00	0.00
PIN1	4.0	100	84	0.6	7.6	5.5	1.8	0.002	0.075	0.38	0.32	0.00	0.03	0.02	0.01	0.00	0.00	1.67	1.40	0.01	0.13	0.09	0.03	0.00	0.00
PIN2	2.5	100	84	0.6	7.6	5.5	1.8	0.002	0.075	0.24	0.20	0.00	0.02	0.01	0.00	0.00	0.00	1.04	0.88	0.01	0.08	0.06	0.02	0.00	0.00
PIN3	2.5	100	84	0.6	7.6	5.5	1.8	0.002	0.075	0.24	0.20	0.00	0.02	0.01	0.00	0.00	0.00	1.04	0.88	0.01	0.08	0.06	0.02	0.00	0.00
IBO1	3.0	100	84	0.6	7.6	5.5	1.8	0.002	0.075	0.29	0.24	0.00	0.02	0.02	0.01	0.00	0.00	1.25	1.05	0.01	0.10	0.07	0.02	0.00	0.00
IBO2	5.2	100	84	0.6	7.6	5.5	1.8	0.002	0.075	0.50	0.42	0.00	0.04	0.03	0.01	0.00	0.00	2.17	1.82	0.01	0.16	0.12	0.04	0.00	0.00
IBO3	5.2	100	84	0.6	7.6	5.5	1.8	0.002	0.075	0.50	0.42	0.00	0.04	0.03	0.01	0.00	0.00	2.17	1.82	0.01	0.16	0.12	0.04	0.00	0.00
OXDZR	9.0	100	84	0.6	7.6	5.5	1.8	0.002	0.075	0.86	0.72	0.01	0.07	0.05	0.02	0.00	0.00	3.75	3.15	0.02	0.29	0.21	0.07	0.00	0.00
Total										**3.97**	**3.34**	**0.02**	**0.30**	**0.22**	**0.07**	**0.00**	**0.00**	**17.39**	**14.61**	**0.10**	**1.32**	**0.96**	**0.31**	**0.00**	**0.01**

Footnotes:

[1] Data Provided by Rexam

[2] Emission Factors are From AP-42 Tables 1.4-1, 1.4-2 and 1.4-3

[3] Hourly Emissions (lb/hr) = Heat Rating (MMBtu/hr) / Natural Gas Heating Value (Btu/scf) * Emission Factor (lb/MMscf)
Natural Gas Heating Value: 1,050 Btu/scf natural gas

[4] Annual Emissions (ton/yr) = Hourly Emissions (lb/hr) * Maximum Operating Hours (hr/yr) / 2000 lb/ton
Maximum Operating Hours: 8,760 hr/yr

Attachment D: Calculated 2003 Actual VOC Annual Emissions

Table D-1
Facility Emissions Summary

REXAM Bevarage Can Company

Phoenix, Arizona

Permit V95005 - Significant Revision

Process ID	Stack ID	Control Device	Estimated Annual VOC Emissions	
			(lb/yr)	(tpy)
CUP	None	None		
BDY	OBP-1	OBP-1	35	0.017
	OBP-2	OBP-2	35	0.017
TRM	None	None		
WSH	WSH	None		
WSHBOIL	WSHBOIL	None	161	0.08
WSHHTR1	S008	None	165	0.08
WSHHTR2	S009	None	147	0.07
PRT1	S014	None	2543	1.27
PRT2	S014	None	2975	1.49
PRT3	S014	None	2960	1.48
PIN1	S001	None	29520	14.76
PIN2	S003	None	34501	17.25
PIN3	S005	None	34379	17.19
ISM1	S011/FUG	None	9940	4.97
ISM2	S012/FUG	None	11531	5.77
ISM3	S013/FUG	None	11507	5.75
IBO1	S002	None	66657	33.33
IBO2	S006/S007	CATOX	5560	2.78
IBO3	S006/S007	CATOX	5550	2.77
OXDZR	S004	N/A	413	0.21
LN1FUG	FUG	None	6712	3.36
LN2FUG	FUG	None	188	0.09
LN3FUG	FUG	None	188	0.09
WAX	None	None		
NCK	None	None		
Total Facility Emissions			**225665**	**112.83**

Table D-2
Calculation of Maximum Material Usage

REXAM Bevarage Can Company

Phoenix, Arizona

Permit V95005 - Significant Revision

Production Area	2001 Can Production[1] *(cans/yr)*	Fraction of 2001 Production[2] *(%)*	Maximum Production[1] *(cans/min)*	Maximum Production[3] *(cans/yr)*	Fraction of Maximum[4] *(%)*
Line 1	3.82E+08	29.28%	1,100	5.78E+08	28.35%
Line 2	4.57E+08	35.04%	1,380	7.25E+08	35.57%
Line 3	4.65E+08	35.68%	1,400	7.36E+08	36.08%
Total	1.30E+09	100.00%	3,880	2.04E+09	100.00%

Footnotes:

[1] Data Provided by Rexam

[2] Fraction of 2001 Production = Individual Line 2001 Can Production / Total 2001 Can Production

[3] Maximum Production (cans/hr) = Maximum Production (cans/min) * 60 min/hr * 8760 (hr/yr)

[4] Fraction of Maximum = Individual Line Maximum Production / Total Maximum Production

Material	Associated Process IDs	Name	2003 Total Usage[1] (gal)	2003 Usage by Line[1] (gal)			Density[1] (lb/gal)	2003 Total Usage[5] (lb)	2003 Usage by Line[5] (lb)			2003 Total Usage[6] (lb)	Potential Usage by Line[6] (lb)		
				Line 1	Line 2	Line 3			Line 1	Line 2	Line 3		Line 1	Line 2	Line 3
I/S SPRAY	ISM, IBO 1-3	M4020W16M		69782.00	80951.00	80787.00	8.56	1,981,811	597,334	692,941	691,537	1,981,811	597,334	692,941	691,537
I/S SPRAY	ISM, IBO 1-3	M4020W20M		0	0	0	8.54	0	0	0	0	0	0	0	0
VARNISH	PRT, PIN 1-3	CC3625XLV		22,706	26,545	26,409	8.75	662,025	198,678	232,269	231,079	662,025	198,678	232,269	231,079
VARNISH	PRT, PIN 1-3	CC3655		725	858	859	9	21,978	6,525	7,722	7,731	21,978	6,525	7,722	7,731
INKS	PRT, PIN 1-3	INX					No Data		36,840	42,933	42,980	0	36,840	42,933	42,980
CLEANER[7]	???	Mirachem 500	1,326				8.34	11,059	3,686	3,686	3,686	11,059	3,686	3,686	3,686
CLEANER[7]	???	Glycol Ether					No Data		4,950			0	4,950	0	0
CLEANER[7]	???	Isopropyl Alcohol					No Data		1,574			0	1,574	0	0

Footnotes:

[1] Data Provided by Rexam

[5] 2001 Usage (lb) = 2001 Total Usage (gal) * Density (lb/gal) ; Except where No Data is provided, the values are provided by Rexam

[6] Potential Usage (lb) = [2001 Usage (lb)] * [Maximum Production (cans/yr)] / [2001 Can Production (cans/yr)]

[7] The "Usage by Line" values have been updated based on data provided in the response dated July 8, 2004 from Rexam.

Table D-3

Particulate Matter and VOC Emissions Associated with Oil Mist Collection System

REXAM Bevarage Can Company

Phoenix, Arizona

Permit V95005 - Significant Revision

Process ID	Stack ID	Annual Operating Hours *(hr)*	Potential Hourly PM Emissions[1] *(lb/hr)*	Potential Annual PM Emissions[2] *(tpy)*	VOC Content[1] *(%)*	Potential Hourly VOC Emissions[3] *(lb/hr)*	Potential Annual VOC Emissions[4] *(tpy)*
BDY	OBP-1	8760	0.061	0.27	6.50%	0.004	0.017
	OBP-2	8760	0.061	0.27	6.50%	0.004	0.017
Total			**0.12**	**0.53**		**0.008**	**0.035**

Footnotes:

[1] Data Provided by Rexam

[2] Potential Annual PM Emissions (tpy) = Potential Hourly PM Emissions (lb/hr) * Annual Operating Hours (hr) / 2000 (lb/ton)

[3] Potential Hourly VOC Emissions (lb/hr) = Potential Hourly PM Emissions (lb/hr) * VOC Content (%)

[4] Potential Annual VOC Emissions (lb/hr) = Potential Annual PM Emissions (lb/hr) * VOC Content (%)

Table D-4

VOC Emissions due to Printing
REXAM Bevarage Can Company
Phoenix, Arizona
Permit V95005 - Significant Revision

Material	Name	Material Composition[1]				Process ID	Potential Annual Usage by Line[2] (lb/yr)	Process ID Fraction of Usage[1] (%)	Potential Annual Usage by ID[3] (lb/yr)	Potential Hourly Emissions[4]				Potential Annual Emissions[5]			
		VOC (%)	Formald-eyhde (%)	Glycol Ether (%)	Chromium Compounds (%)					VOC (lb/hr)	Formald-eyhde (lb/hr)	Glycol Ether (lb/hr)	Chromium Compounds (lb/hr)	VOC (tpy)	Formald-eyhde (tpy)	Glycol Ether (tpy)	Chromium Compounds (tpy)
VARNISH	CC3625XLV	11.20%	0.00%	7.20%	0.00%	PRT1	198,678	10.00%	19,868	0.25	0.00	0.16	0.00	1.11	0.00	0.72	0.00
						PIN1		90.00%	178,810	2.29	0.00	1.47	0.00	10.01	0.00	6.44	0.00
						PRT2	232,269	10.00%	23,227	0.30	0.00	0.19	0.00	1.30	0.00	0.84	0.00
						PIN2		90.00%	209,042	2.67	0.00	1.72	0.00	11.71	0.00	7.53	0.00
						PRT3	231,079	10.00%	23,108	0.30	0.00	0.19	0.00	1.29	0.00	0.83	0.00
						PIN3		90.00%	207,971	2.66	0.00	1.71	0.00	11.65	0.00	7.49	0.00
VARNISH	CC3655	14.90%	0.00%	10.70%	0.00%	PRT1	6,525	10.00%	653	0.01	0.00	0.01	0.00	0.05	0.00	0.03	0.00
						PIN1		90.00%	5,873	0.10	0.00	0.07	0.00	0.44	0.00	0.31	0.00
						PRT2	7,722	10.00%	772	0.01	0.00	0.01	0.00	0.06	0.00	0.04	0.00
						PIN2		90.00%	6,950	0.12	0.00	0.08	0.00	0.52	0.00	0.37	0.00
						PRT3	7,731	10.00%	773	0.01	0.00	0.01	0.00	0.06	0.00	0.04	0.00
						PIN3		90.00%	6,958	0.12	0.00	0.08	0.00	0.52	0.00	0.37	0.00
INKS	INX	18.00%	0.01%	9.11%	0.02%	PRT1	36,840	0.00%	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
						PIN1		100.00%	36,840	0.76	0.00	0.38	0.00	3.32	0.00	1.68	0.00
						PRT2	42,933	0.00%	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
						PIN2		100.00%	42,933	0.88	0.00	0.45	0.00	3.86	0.00	1.96	0.00
						PRT3	42,980	0.00%	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
						PIN3		100.00%	42,980	0.88	0.00	0.45	0.00	3.87	0.00	1.96	0.00
									Totals:	**11.36**	**0.00**	**6.99**	**0.00**	**49.76**	**0.01**	**30.60**	**0.01**

Footnotes:

[1] Data Provided by Rexam

[2] As calculated in the "Calculation of Maximum Material Usage" table.

[3] Potential Annual Usage by ID (lb/yr) = Potential Annual Usage by Line (lb/yr) * Process ID Fraction of Usage (%)

[4] Potential Hourly Emissions (lb/hr) = Potential Annual Emissions (tpy) / 8760 (hr/yr) * 2000 (lb/ton)

[5] Potential Annual Emissions (tpy) = Potential Annual Usage by ID (lb/yr) * Pollutant Specific Material Composition (%) / 2000 (lb/ton)

Table D-4a

Formed Formaldehyde (HCHO) Emissions due to Printing
REXAM Bevarage Can Company
Phoenix, Arizona
Permit V95005 - Significant Revision

Material	Name	Emission Factor[1] *(lb HCHO / lb Solids)*	Solids Content[2] *(lb Solids / lb Material)*	Emission Factor[3] *(lb HCHO / lb Material)*	Process ID	Potential Annual Usage by Line[4] *(lb/yr)*	Process ID Fraction of Usage[2] (%)	Potential Annual Usage by ID[5] *(lb/yr)*	Potential Hourly Formaldehyde Emissions[6] *(lb/hr)*	Potential Annual Formaldehyde Emissions[7] *(tpy)*
VARNISH	CC3625XLV	0.028	0.38	0.011	PRT1	198,678	10.00%	19,868	0.02	0.11
					PIN1		90.00%	178,810	0.22	0.95
					PRT2	232,269	10.00%	23,227	0.03	0.12
					PIN2		90.00%	209,042	0.25	1.11
					PRT3	231,079	10.00%	23,108	0.03	0.12
					PIN3		90.00%	207,971	0.25	1.11
VARNISH	CC3655	0.028	0.52	0.014	PRT1	6,525	10.00%	653	0.00	0.00
					PIN1		90.00%	5,873	0.01	0.04
					PRT2	7,722	10.00%	772	0.00	0.01
					PIN2		90.00%	6,950	0.01	0.05
					PRT3	7,731	10.00%	773	0.00	0.01
					PIN3		90.00%	6,958	0.01	0.05
								Totals:	**0.84**	**3.68**

Footnotes:

[1] Emission Factor Provided by Rexam based on Internal Engineering Estimate from Source Testing at Similar Facilities

[2] Data Provided by Rexam

[3] Emission Factor (lb HCHO / lb material) = Emission Factor (lb HCHO / lb solid) * Solids Content (lb solids / lb material)

[4] As calculated in the "Calculation of Maximum Material Usage" table.

[5] Potential Annual Usage by ID (lb/yr) = Potential Annual Usage by Line (lb/yr) * Process ID Fraction of Usage (%)

[6] Potential Hourly Emissions (lb/hr) = Potential Annual Emissions (tpy) / 8760 (hr/yr) * 2000 (lb/ton)

[7] Potential Annual Emissions (tpy) = Potential Annual Usage by ID (lb/yr) * Pollutant Specific Material Composition (%) / 2000 (lb/ton)

Table D-5

VOC Emissions due to Inside Spray Operations
REXAM Bevarage Can Company
Phoenix, Arizona
Permit V95005 - Significant Revision

Material	Name	Material Composition[1]				Process ID	Potential Annual Usage by Line[2] (lb/yr)	Process ID Fraction of Usage[1] (%)	Potential Annual Usage by ID[3] (lb/yr)	Control Efficiency[1] (%)	Potential Hourly Emissions[4]				Potential Annual Emi		
		VOC (%)	Formald-eyhde (%)	Glycol Ether (%)	Chromium Compounds (%)						VOC (lb/hr)	Formald-eyhde (lb/hr)	Glycol Ether (lb/hr)	Chromium Compounds (lb/hr)	VOC (tpy)	Formald-eyhde (tpy)	Glycol Ether (tpy)
I/S SPRAY	M4020W16M	12.80%	0.00%	6.00%	0.00%	ISM1	597,334	13.00%	77,653	0%	1.13	0.00	0.53	0.00	4.97	0.00	2.33
						IBO1		87.00%	519,681	0%	7.59	0.00	3.56	0.00	33.26	0.00	15.59
						ISM2	692,941	13.00%	90,082	0%	1.32	0.00	0.62	0.00	5.77	0.00	2.70
						IBO2		87.00%	602,858	93%	0.61	0.00	0.28	0.00	2.66	0.00	1.25
						ISM3	691,537	13.00%	89,900	0%	1.31	0.00	0.62	0.00	5.75	0.00	2.70
						IBO3		87.00%	601,637	93%	0.61	0.00	0.28	0.00	2.66	0.00	1.24
I/S SPRAY	M4020W20M	13.10%	0.00%	6.00%	0.00%	ISM1	0	13.00%	0	0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
						IBO1		87.00%	0	0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
						ISM2	0	13.00%	0	0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
						IBO2		87.00%	0	93%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
						ISM3	0	13.00%	0	0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
						IBO3		87.00%	0	93%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
										Totals:	**12.57**	**0.00**	**5.89**	**0.00**	**55.06**	**0.00**	**25.81**

Footnotes:

[1] Data Provided by Rexam

[2] As calculated in the "Calculation of Maximum Material Usage" table.

[3] Potential Annual Usage by ID (lb/yr) = Potential Annual Usage by Line (lb/yr) * Process ID Fraction of Usage (%)

[4] Potential Hourly Emissions (lb/hr) = Potential Annual Emissions (tpy) / 8760 (hr/yr) * 2000 (lb/ton)

[5] Potential Annual Emissions (tpy) = Potential Annual Usage by ID (lb/yr) * Pollutant Specific Material Composition (%) / 2000 (lb/ton)

Table D-6

VOC Emissions due to Cleaner Usage
REXAM Bevarage Can Company
Phoenix, Arizona
Permit V95005 - Significant Revision

Material	Name	Material Composition[1]				Process ID	Potential Annual Usage by Line[2]	FIN Fraction of Usage[1]	Potential Annual Usage by ID[3]	Potential Hourly Emissions[4]				Potential Annual Emissions[5]			
		VOC (%)	Formald-eyhde (%)	Glycol Ether (%)	Chromium Compounds (%)		(lb/yr)	(%)	(lb/yr)	VOC (lb/hr)	Formald-eyhde (lb/hr)	Glycol Ether (lb/hr)	Chromium Compounds (lb/hr)	VOC (tpy)	Formald-eyhde (tpy)	Glycol Ether (tpy)	Chromium Compounds (tpy)
CLEANER	Mirachem 500	5.10%	0.00%	0.00%	0.00%	LN1FUG	3,686	100.00%	3,686	0.02	0.00	0.00	0.00	0.09	0.00	0.00	0.00
						LN2FUG	3,686	100.00%	3,686	0.02	0.00	0.00	0.00	0.09	0.00	0.00	0.00
						LN3FUG	3,686	100.00%	3,686	0.02	0.00	0.00	0.00	0.09	0.00	0.00	0.00
CLEANER	Glycol Ether	100.0%	0.00%	100.0%	0.00%	LN1FUG	4,950	100.00%	4,950	0.57	0.00	0.57	0.00	2.48	0.00	2.48	0.00
						LN2FUG	0	100.00%	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
						LN3FUG	0	100.00%	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CLEANER	Isopropyl Alcohol	100.0%	0.00%	0.00%	0.00%	LN1FUG	1,574	100.00%	1,574	0.18	0.00	0.00	0.00	0.79	0.00	0.00	0.00
						LN2FUG	0	100.00%	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
						LN3FUG	0	100.00%	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
									Totals:	**0.79**	**0.00**	**0.57**	**0.00**	**3.45**	**0.00**	**2.48**	**0.00**

Footnotes:

[1] Data Provided by Rexam

[2] As calculated in the "Calculation of Maximum Material Usage" table.

[3] Potential Annual Usage by ID (lb/yr) = Potential Annual Usage by Line (lb/yr) * Process ID Fraction of Usage (%)

[4] Potential Hourly Emissions (lb/hr) = Potential Annual Emissions (tpy) / 8760 (hr/yr) * 2000 (lb/ton)

[5] Potential Annual Emissions (tpy) = Potential Annual Usage by ID (lb/yr) * Pollutant Specific Material Composition (%) / 2000 (lb/ton)

Table D-7
Natural Gas Combustion Emission Estimates

REXAM Bevarage Can Company

Phoenix, Arizona

Permit V95005 - Significant Revision

Process ID	Heat Rating[1] (MMBtu/hr)	Emission Factor[2] (lb/MMscf)								Hourly Emissions[3] (lb/hr)								Annual Emissions[4] (ton/yr)							
		NO_x	CO	SO_2	PM	VOC	HXN	BZN	FML	NO_x	CO	SO_2	PM	VOC	HXN	BZN	FML	NO_x	CO	SO_2	PM	VOC	HXN	BZN	FML
WSHBOIL	3.5	100	84	0.6	7.6	5.5	1.8	0.002	0.075	0.33	0.28	0.00	0.03	0.02	0.01	0.00	0.00	1.46	1.23	0.01	0.11	0.08	0.03	0.00	0.00
WSHHTR1	3.6	100	84	0.6	7.6	5.5	1.8	0.002	0.075	0.34	0.29	0.00	0.03	0.02	0.01	0.00	0.00	1.50	1.26	0.01	0.11	0.08	0.03	0.00	0.00
WSHHTR2	3.2	100	84	0.6	7.6	5.5	1.8	0.002	0.075	0.30	0.26	0.00	0.02	0.02	0.01	0.00	0.00	1.33	1.12	0.01	0.10	0.07	0.02	0.00	0.00
PIN1	4.0	100	84	0.6	7.6	5.5	1.8	0.002	0.075	0.38	0.32	0.00	0.03	0.02	0.01	0.00	0.00	1.67	1.40	0.01	0.13	0.09	0.03	0.00	0.00
PIN2	2.5	100	84	0.6	7.6	5.5	1.8	0.002	0.075	0.24	0.20	0.00	0.02	0.01	0.00	0.00	0.00	1.04	0.88	0.01	0.08	0.06	0.02	0.00	0.00
PIN3	2.5	100	84	0.6	7.6	5.5	1.8	0.002	0.075	0.24	0.20	0.00	0.02	0.01	0.00	0.00	0.00	1.04	0.88	0.01	0.08	0.06	0.02	0.00	0.00
IBO1	3.0	100	84	0.6	7.6	5.5	1.8	0.002	0.075	0.29	0.24	0.00	0.02	0.02	0.01	0.00	0.00	1.25	1.05	0.01	0.10	0.07	0.02	0.00	0.00
IBO2	5.2	100	84	0.6	7.6	5.5	1.8	0.002	0.075	0.50	0.42	0.00	0.04	0.03	0.01	0.00	0.00	2.17	1.82	0.01	0.16	0.12	0.04	0.00	0.00
IBO3	5.2	100	84	0.6	7.6	5.5	1.8	0.002	0.075	0.50	0.42	0.00	0.04	0.03	0.01	0.00	0.00	2.17	1.82	0.01	0.16	0.12	0.04	0.00	0.00
OXDZR	9.0	100	84	0.6	7.6	5.5	1.8	0.002	0.075	0.86	0.72	0.01	0.07	0.05	0.02	0.00	0.00	3.75	3.15	0.02	0.29	0.21	0.07	0.00	0.00
Total										**3.97**	**3.34**	**0.02**	**0.30**	**0.22**	**0.07**	**0.00**	**0.00**	**17.39**	**14.61**	**0.10**	**1.32**	**0.96**	**0.31**	**0.00**	**0.01**

Footnotes:

[1] Data Provided by Rexam

[2] Emission Factors are From AP-42 Tables 1.4-1, 1.4-2 and 1.4-3

[3] Hourly Emissions (lb/hr) = Heat Rating (MMBtu/hr) / Natural Gas Heating Value (Btu/scf) * Emission Factor (lb/MMscf)
Natural Gas Heating Value: 1,050 Btu/scf natural gas

[4] Annual Emissions (ton/yr) = Hourly Emissions (lb/hr) * Maximum Operating Hours (hr/yr) / 2000 lb/ton
Maximum Operating Hours: 8,760 hr/yr

Attachment E: Detailed Potential Pre-control Device Emission Calculations for Specific Emission Units (CAM related)

Table E-1
Facility Equipment Capacity

REXAM Bevarage Can Company

Phoenix, Arizona

Permit V95005 - Significant Revision

Description (Process ID)	Value	Units	Comment
Cupper Capacity (CUP)	Unknown	N/A	Assumed to be limited by Printer Capacity on Annual Basis
Bodymaker Capacity (BDY)	Unknown	N/A	Assumed to be limited by Printer Capacity on Annual Basis
Trimmer Capacity (TRM)	Unknown	N/A	Assumed to be limited by Printer Capacity on Annual Basis
Washer Capacity (WSH)	Unknown	N/A	Assumed to be limited by Printer Capacity on Annual Basis
Washer Boiler Heat Rating (WSHBOIL)	3.50	MMBtu/hr	As listed in Title V Technical Support Document
Washed Object Dryer 1 Heat Rating (WSHHTR1)	3.60	MMBtu/hr	As listed in Title V Technical Support Document
Washed Object Dryer 2 Heat Rating (WSHHTR2)	3.20	MMBtu/hr	As listed in Title V Technical Support Document
Bright Palletizer Capacity (BRTPLT)	Unknown	N/A	Assumed to be limited by Printer Capacity on Annual Basis
Printer Line 1 Capacity (PRT1)	1100	cans/min	As listed in Rexam Emission Calculations
Printer Line 2 Capacity (PRT2)	1380	cans/min	As listed in Rexam Emission Calculations
Printer Line 3 Capacity (PRT3)	1400	cans/min	As listed in Rexam Emission Calculations
Pin Oven 1 Heat Rating (PIN1)	4.00	MMBtu/hr	As listed in Title V Technical Support Document
Pin Oven 2 Heat Rating (PIN2)	2.50	MMBtu/hr	As listed in Title V Technical Support Document
Pin Oven 3 Heat Rating (PIN3)	2.50	MMBtu/hr	As listed in Title V Technical Support Document
Inside Spray Machine Line 1 Capacity (ISM1)	1100	cans/min	As listed in Rexam Emission Calculations
Inside Spray Machine Line 2 Capacity (ISM2)	1380	cans/min	As listed in Rexam Emission Calculations
Inside Spray Machine Line 3 Capacity (ISM3)	1400	cans/min	As listed in Rexam Emission Calculations
Inside Bake Oven 1 Heat Rating (IBO1)	3.00	MMBtu/hr	As listed in Title V Technical Support Document
Inside Bake Oven 2 Heat Rating (IBO2)	5.20	MMBtu/hr	As listed in Title V Technical Support Document
Inside Bake Oven 3 Heat Rating (IBO3)	5.20	MMBtu/hr	As listed in Title V Technical Support Document
Oxidizer Heat Rating (OXDZR)	4.50	MMBtu/hr	As listed in Title V Technical Support Document
Oxidizer Control Efficiency (OXDZR)	0.00%	%	Based on Emission Calculations
Waxing Station Capacity (WAX)	Unknown	N/A	Assumed to be limited by Printer Capacity on Annual Basis
Necking Capacity (NCK)	Unknown	N/A	Assumed to be limited by Printer Capacity on Annual Basis
Product Palletizer Capacity (PRDPLT)	Unknown	N/A	Assumed to be limited by Printer Capacity on Annual Basis

Table E-2
Facility Emissions Summary

REXAM Bevarage Can Company

Phoenix, Arizona

Permit V95005 - Significant Revision

Process ID	Stack ID	Control Device	Hourly Emissions (lb/hr)						Annual Emissions (ton/yr)					
			NO_x	CO	SO_2	PM	VOC	HAP	NO_x	CO	SO_2	PM	VOC	HAP
ISM1	S011	OXDZR				0.12	6.43	0.79				0.51	28.18	3.44
ISM2	S012	OXDZR				0.14	7.71	0.94				0.61	33.76	4.12
ISM3	S013	OXDZR				0.14	7.88	0.96				0.62	34.49	4.21
IBO2	S006/S007	OXDZR	0.50	0.42	0.00	0.04	51.61	6.31	2.17	1.82	0.01	0.16	226.03	27.62
IBO3	S006/S007	OXDZR	0.50	0.42	0.00	0.04	52.73	6.44	2.17	1.82	0.01	0.16	230.96	28.22

Table E-3
Calculation of Maximum Material Usage

REXAM Bevarage Can Company

Phoenix, Arizona

Permit V95005 - Significant Revision

Production Area	2001 Can Production[1] *(cans/yr)*	Fraction of 2001 Production[2] *(%)*	Maximum Production[1] *(cans/min)*	Maximum Production[3] *(cans/yr)*	Fraction of Maximum[4] *(%)*
Line 1	3.82E+08	29.28%	1,100	5.78E+08	28.35%
Line 2	4.57E+08	35.04%	1,380	7.25E+08	35.57%
Line 3	4.65E+08	35.68%	1,400	7.36E+08	36.08%
Total	1.30E+09	100.00%	3,880	2.04E+09	100.00%

Footnotes:

[1] Data Provided by Rexam

[2] Fraction of 2001 Production = Individual Line 2001 Can Production / Total 2001 Can Production

[3] Maximum Production (cans/hr) = Maximum Production (cans/min) * 60 min/hr * 8760 (hr/yr)

[4] Fraction of Maximum = Individual Line Maximum Production / Total Maximum Production

Material	Associated Process IDs	Name	2001 Total Usage[1] (gal)	2001 Usage by Line[1] (gal)			Density[1] (lb/gal)	2001 Total Usage[5] (lb)	2001 Usage by Line[5] (lb)			Potential Usage[6] (lb)	Potential Usage by Line[6] (lb)		
				Line 1	Line 2	Line 3			Line 1	Line 2	Line 3		Line 1	Line 2	Line 3
I/S SPRAY	ISM, IBO 1-3	M4020W16M	63,172	18360.00	21121.00	23691.00	8.56	540,752	157,162	180,796	202,795	845,534	245,742	282,697	317,095
I/S SPRAY	ISM, IBO 1-3	M4020W20M	162,733	47,661	57,959	57,113	8.54	1,389,740	407,025	494,970	487,745	2,173,033	636,435	773,948	762,651
VARNISH	PRT, PIN 1-3	CC3625XLV	76,137	22,256	26,567	27,315	8.75	666,199	194,740	232,461	239,006	1,041,686	304,501	363,482	373,716
VARNISH	PRT, PIN 1-3	CC3655	2,065	608	729	747	9	18,585	5,472	6,561	6,723	29,060	8,556	10,259	10,512
INKS	PRT, PIN 1-3	INX	No Data	No Data	No Data	No Data	No Data	119,079	34,834	41,610	42,634	186,195	54,467	65,062	66,664
CLEANER	???	Mirachem 500	110	37	12	4	8.34	917	306	102	34	1,434	478	159	53
CLEANER	???	Glycol Ether	No Data	No Data	No Data	No Data	No Data	10,790	3,597	1,199	400	16,872	5,624	1,875	625
CLEANER	???	Isopropyl Alcohol	No Data	No Data	No Data	No Data	No Data	2,840	947	316	105	4,441	1,480	493	164

Footnotes:

[1] Data Provided by Rexam

[5] 2001 Usage (lb) = 2001 Total Usage (gal) * Density (lb/gal) ; Except where No Data is provided, the values are provided by Rexam

[6] Potential Usage (lb) = [2001 Usage (lb)] * [Maximum Production (cans/yr)] / [2001 Can Production (cans/yr)]

Table E-4

Particulate Matter Emissions due to Inside Spray Operations

REXAM Bevarage Can Company

Phoenix, Arizona

Permit V95005 - Significant Revision

Material	Name	Solids Content[1] *(%)*	Process ID	Potential Annual Usage[2] *(lb/yr)*	Overspray Percent[3] *(%)*	Control Efficiency[3] *(%)*	Potential Hourly Emissions[4] *(lb/hr)*	Potential Annual Emissions[5] *(tpy)*
I/S SPRAY	M4020W16M	24.60%	ISM1	245,742	6%	92%	0.03	0.15
			ISM2	282,697	6%	92%	0.04	0.17
			ISM3	317,095	6%	92%	0.04	0.19
I/S SPRAY	M4020W20M	23.90%	ISM1	636,435	6%	92%	0.08	0.37
			ISM2	773,948	6%	92%	0.10	0.44
			ISM3	762,651	6%	92%	0.10	0.44
						Totals:	**0.40**	**1.75**

Footnotes:

[1] Data Provided by Rexam

[2] As calculated in the "Calculation of Maximum Material Usage" table.

[3] As assumed by Rexam

[4] Potential Hourly Emissions = Potential Annual Emissions (tpy) * 2000 (lb/ton) / 8760 (hr/yr)

[5] Potential Annual Emissions =
Potential Annual Usage (lb/yr) * Solids Content (%) * Overspray Percent (%) * [1 - Control Efficiency (%)] / 2000 (lb/ton)

Table E-5

VOC Emissions due to Inside Spray Operations
REXAM Bevarage Can Company
Phoenix, Arizona
Permit V95005 - Significant Revision

Material	Name	Material Composition[1]				Process ID	Potential Annual Usage by Line[2] (lb/yr)	Process ID Fraction of Usage[1] (%)	Potential Annual Usage by ID[3] (lb/yr)	Control Efficiency[1] (%)	Potential Hourly Emissions[4]				Potential Annual Emi		
		VOC (%)	Formald-eyhde (%)	Glycol Ether (%)	Chromium Compounds (%)						VOC (lb/hr)	Formald-eyhde (lb/hr)	Glycol Ether (lb/hr)	Chromium Compounds (lb/hr)	VOC (tpy)	Formald-eyhde (tpy)	Glycol Ether (tpy)
I/S SPRAY	M4020W16M	49.07%	0.00%	6.00%	0.00%	ISM1	245,742	13.00%	31,946	0%	1.79	0.00	0.22	0.00	7.84	0.00	0.96
						IBO1		87.00%	213,796	0%	11.97	0.00	1.46	0.00	52.45	0.00	6.41
						ISM2	282,697	13.00%	36,751	0%	2.06	0.00	0.25	0.00	9.02	0.00	1.10
						IBO2		87.00%	245,946	0%	13.78	0.00	1.68	0.00	60.34	0.00	7.38
						ISM3	317,095	13.00%	41,222	0%	2.31	0.00	0.28	0.00	10.11	0.00	1.24
						IBO3		87.00%	275,873	0%	15.45	0.00	1.89	0.00	67.68	0.00	8.28
I/S SPRAY	M4020W20M	49.18%	0.00%	6.00%	0.00%	ISM1	636,435	13.00%	82,737	0%	4.64	0.00	0.57	0.00	20.35	0.00	2.48
						IBO1		87.00%	553,698	0%	31.09	0.00	3.79	0.00	136.16	0.00	16.61
						ISM2	773,948	13.00%	100,613	0%	5.65	0.00	0.69	0.00	24.74	0.00	3.02
						IBO2		87.00%	673,335	0%	37.80	0.00	4.61	0.00	165.57	0.00	20.20
						ISM3	762,651	13.00%	99,145	0%	5.57	0.00	0.68	0.00	24.38	0.00	2.97
						IBO3		87.00%	663,506	0%	37.25	0.00	4.54	0.00	163.16	0.00	19.91
										Totals:	**169.36**	**0.00**	**20.68**	**0.00**	**741.78**	**0.00**	**90.56**

Footnotes:

[1] Data Provided by Rexam

[2] As calculated in the "Calculation of Maximum Material Usage" table.

[3] Potential Annual Usage by ID (lb/yr) = Potential Annual Usage by Line (lb/yr) * Process ID Fraction of Usage (%)

[4] Potential Hourly Emissions (lb/hr) = Potential Annual Emissions (tpy) / 8760 (hr/yr) * 2000 (lb/ton)

[5] Potential Annual Emissions (tpy) = Potential Annual Usage by ID (lb/yr) * Pollutant Specific Material Composition (%) / 2000 (lb/ton)

Table E-6
Natural Gas Combustion Emission Estimates

REXAM Bevarage Can Company

Phoenix, Arizona

Permit V95005 - Significant Revision

Process ID	Heat Rating[1] (MMBtu/hr)	Emission Factor[2] (lb/MMscf)								Hourly Emissions[3] (lb/hr)								Annual Emissions[4] (ton/yr)							
		NO_x	CO	SO_2	PM	VOC	HXN	BZN	FML	NO_x	CO	SO_2	PM	VOC	HXN	BZN	FML	NO_x	CO	SO_2	PM	VOC	HXN	BZN	FML
IBO2	5.2	100	84	0.6	7.6	5.5	1.8	0.002	0.075	0.50	0.42	0.00	0.04	0.03	0.01	0.00	0.00	2.17	1.82	0.01	0.16	0.12	0.04	0.00	0.00
IBO3	5.2	100	84	0.6	7.6	5.5	1.8	0.002	0.075	0.50	0.42	0.00	0.04	0.03	0.01	0.00	0.00	2.17	1.82	0.01	0.16	0.12	0.04	0.00	0.00
Total										**0.99**	**0.83**	**0.01**	**0.08**	**0.05**	**0.02**	**0.00**	**0.00**	**4.34**	**3.64**	**0.03**	**0.33**	**0.24**	**0.08**	**0.00**	**0.00**

Footnotes:

[1] Data Provided by Rexam

[2] Emission Factors are From AP-42 Tables 1.4-1, 1.4-2 and 1.4-3

[3] Hourly Emissions (lb/hr) = Heat Rating (MMBtu/hr) / Natural Gas Heating Value (Btu/scf) * Emission Factor (lb/MMscf)
Natural Gas Heating Value: 1,050 Btu/scf natural gas

[4] Annual Emissions (ton/yr) = Hourly Emissions (lb/hr) * Maximum Operating Hours (hr/yr) / 2000 lb/ton
Maximum Operating Hours: 8,760 hr/yr

Attachment F: April 13, 1999 Bay Area Air Quality Management District Interoffice Memorandum; NOx and CO RACT Levels for Thermal Oxidizers

INTEROFFICE MEMORANDUM

April 13, 1999

TO: BILL DEBOISBLANC

DIRECTOR OF PERMIT SERVICES

VIA: STEVE HILL

FROM: AFTERBURNER RACT TEAM
BARRY YOUNG
GREG STONE
WEYMAN LEE
BOB BARTLEY

SUBJECT: NOx AND CO RACT LEVELS FOR THERMAL OXIDIZERS

The requirement to apply RACT (Reasonably Available Control Technology) to secondary pollutants from thermal oxidizers is contained in Regulation 2-2-112, which states that emissions of secondary pollutants from an abatement device is subject to RACT requirements, when the abatement device is being used to meet BACT or BARCT requirements for a source or sources.

This memo is to request your concurrence with the following recommendations of the Afterburner RACT Team:

1. **The following RACT control levels for secondary pollutant emissions from thermal oxidizers: 50 ppmvd NOx @ 15% O_2 [0.20 lb/MMBtu] and 350 ppmvd CO @ 15% O_2 [0.80 lb/MMBtu] and**

2. **For thermal oxidizers $\geq$ 7.5 MMBtu/hour maximum rated heat input, the owner/operator shall have the above NOx and CO limits specified in their permit conditions and shall have permit conditions that require an initial compliance source test of NOx and CO emissions.**

3. **For thermal oxidizers < 7.5 MMBtu/hour maximum rated heat input:**

a. **If the vendor's NOx and CO emissions guarantee and/or specifications do not exceed the above NOx and CO RACT control levels, then the owner/operator is required to have permit conditions that limit NOx and CO emissions to the above RACT levels, but is not required to conduct an initial compliance source test of NOx and CO emissions.**

b. **If the vendor's NOx and CO emissions guarantee and/or specifications exceed the above NOx and CO RACT control levels or are not available, then the owner/operator is subject to the same requirements as for thermal oxidizers $\geq$ 7.5 MMBtu/hour, shown in recommendation #2 above.**

It is difficult to control the NOx and CO emissions from thermal oxidizers due to their inherent design. In order to achieve the goal of high VOC destruction efficiency, high excess air (14-20% O_2; 180%-550% excess air) is required to achieve high combustion temperatures and to create turbulence. Combustion efficiency is therefore a secondary design criteria. Furthermore, unlike a boiler, an oxidizer has no heat transfer in the combustion chamber resulting in higher thermal NOx formation.

The oxidizer can be tuned, in a limited way, to optimize the combustion for the lowest possible NOx and CO emissions. We are skeptical of claims that certain thermal oxidizer burners are "low-NOx burners".

The Source Test Section's test results on thermal oxidizers show that the average NOx emissions for thermal oxidizers equipped with so-called "low-NOx burners" were higher than the average for those equipped with conventional burners. Requiring thermal oxidizers to meet a RACT level below that of an oxidizer equipped with conventional burners would not be technologically feasible, until acceptable control technologies are identified. Therefore, at this time, the Team's recommended RACT control levels correspond to the average emissions from the oxidizers that have been source tested by the District within the past year. Compliance with RACT should be achievable by proper tuning of the oxidizer.

The recommended RACT control levels are based on 17 of the District's source tests on thermal oxidizers conducted by the District's Source Test Section between 10/31/97 and 7/8/98.

Sample permit conditions to be added to each source that is abated by a thermal oxidizer ≥ 7.5 MMBtu/hour that is subject to NOx and CO RACT per Regulation 2-2-112:

1. Nitrogen oxides (NOx) emissions from thermal oxidizer A-1 shall not exceed 50 ppmvd @ 15% O_2 (0.20 lb/MMBtu) [basis: RACT, Source Test Method 13A]

2. Carbon monoxide (CO) emissions from thermal oxidizer A-1 shall not exceed 350 ppmvd @ 15% O_2 (0.80 lb/MMBtu) [basis: RACT, Source Test Method 6]

3. In order to demonstrate compliance with Conditions 1 and 2 above, the permit holder shall perform a District approved source test within 60 days of startup of thermal oxidizer A-1, in accordance with the District's Manual of Procedures. The permit holder shall notify the Manager of the District's Source Test Section at least seven (7) days prior to the test, to provide the District staff the option of observing the testing. Within 45 days of test completion, a comprehensive report of the test results shall be submitted to the Manager of the District's Source Test Section for review and disposition. (basis: Regulation 2-1-403)

-

BGY:bgy

P:/general/NSR/RACT2.doc